FIRST LOOK: QUICKTIME 5 PUBLIC PREVIEW

MacAddict

A better machine. A better magazine.

www.macaddict.com

JANUARY 2001 NO. 53

EXCLUSIVE PHOTOS

Apple's Product Line Like You've Never Seen It Before!

PLUS:

Exposing Internet Explorer's Hidden Features

Use Old Peripherals with New Macs

Make Mac OS X Act Like Mac OS 9

$7.99 U.S./$8.99 CANADA

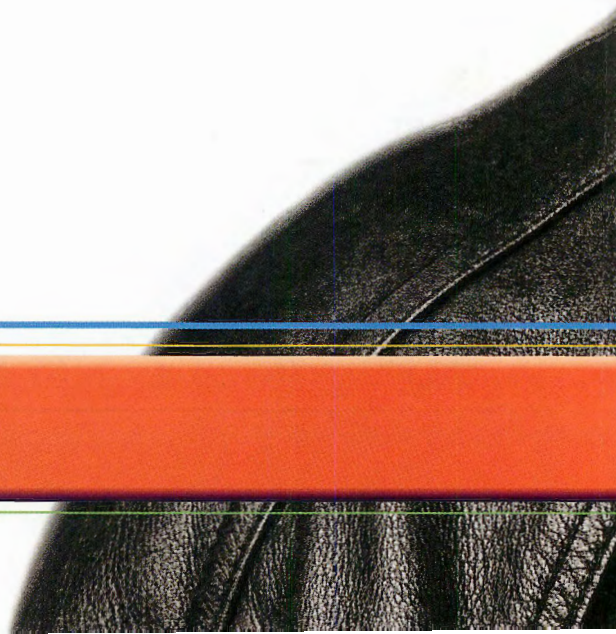
01>

0 74470 01096 8

imagine MEDIA WITH PASSION

REVIEWED: PHOTOSHOP 6.0, iBOOK SPECIAL EDITION, RIO 600, RADEON FOR MACINTOSH, RISK II

Microsoft Office:mac 2001



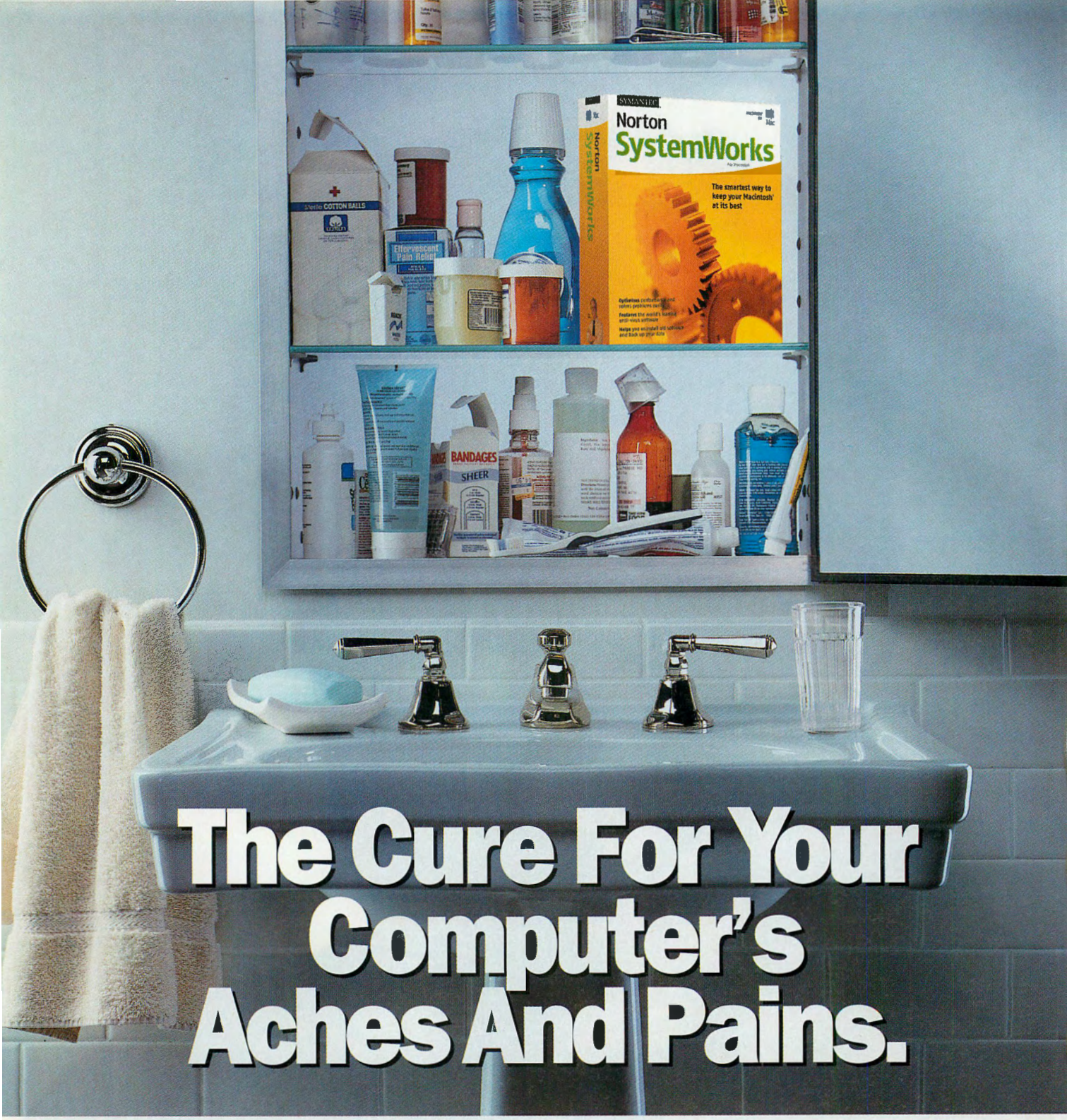
© 2000 Microsoft Corporation. All rights reserved. Microsoft is a registered trademark of Microsoft Corporation in the United States and/or other countries. Apple, Mac, and Macintosh are registered trademarks of Apple Computer, Inc.

David

If I had my way, work would be fast. Not furious. And it would be over sooner, so I could get on with the important business of life — having fun. That's why I want **Microsoft® Office 2001.** It's faster, smarter, and more fun. Just like me. All the essentials. Made easy. Made for my Mac.

microsoft.com/mac

Microsoft



The Cure For Your Computer's Aches And Pains.

Has your Mac® seen healthier days? Maybe it caught a bug. Is badly congested. Or suffers from hardware headaches. Fortunately, there's a simple remedy for such ailments.... Norton SystemWorks™ for Macintosh®.

Norton SystemWorks gives your entire Macintosh a complete check-up. Then, cures what ails it. Plus, it inoculates your computer against viruses, while preventing it from getting sick in the first place.

So to keep your Mac out of the infirmary, here's our diagnosis: Take the all-in-one cure, Norton SystemWorks for Macintosh. You'll find it over the counter at your nearest software store, or visit **www.symantec.com/mac**.

Compatible with Mac O/S 8.1 or greater.

Symantec and the Symantec logo are U.S. registered trademarks of Symantec Corporation. Norton SystemWorks is a trademark of Symantec Corporation. Mac and Macintosh are registered trademarks of Apple Computer, Inc. Copyright © 2000 Symantec Corporation. All rights reserved.

SYMANTEC

contents

No. 53 January 2001 Volume 6 Issue 1

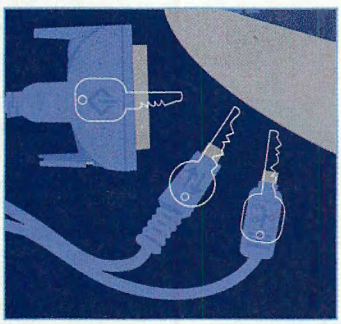
MacAddict
A better machine. A better magazine.

highlights

24 Look and Feel
Apple's current computers are the most elegant, stunning, beautiful Macs in a 15-year history of elegant, stunning, beautiful Macs. This month we take a unique look at the jaw-dropping power of today's Apple industrial design. **photography by Stan Musilek**

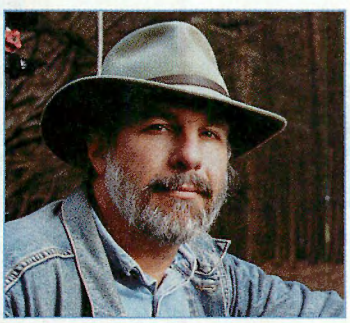
Would you like your breakfast in bed?

36 The Great Migration
So you're slavering over that new multiprocessor G4—but what about that old SCSI scanner and LocalTalk laser printer you want to hang on to? We tell you how to make the leap to the new without leaving behind the old. **by Alan Stafford**



Eew, that drive is so SCSI!

42 Portrait of an Artist
As a renowned landscape photographer, Stephen Johnson captures the wonder of nature digitally. Get an up-close and personal look at how his PowerBook G3 plays an integral part in his work. **by Cathy Lu**



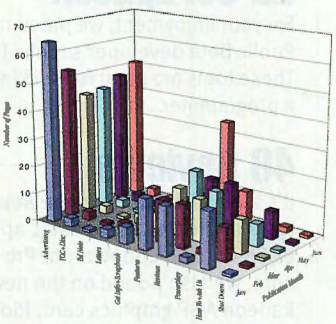
I think Indy wants his hat back.

how to

74 Find Internet Explorer's Hidden Tricks
While all the bells, whistles, horns, and sirens Microsoft has added to Internet Explorer may leave you deaf and blind, some of these extras can actually speed up your browsing. **by Joseph O. Holmes**

I see Timmy and Bobby...and Cindy...

78 Make Charts That Don't Suck
See one of our staff members descend into chart madness! Shudder as he waxes eloquent about the difference between line and scatter charts! Run screaming as he ominously describes this as the tip of the iceberg! Realize there's no hope as he starts plotting the number of iceberg-related disasters from 1900 to 2000! **by Ian Sammis**

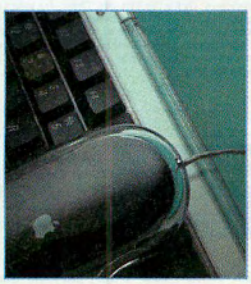


Charter yourself a clue.

84 Make Mac OS X Look and Act Like Mac OS 9
While we all appreciate the stability and performance even the *beta* of OS X has produced, sometimes we feel like we're drowning in Aqua. To ease our pain, we dug in and managed to platinum-plate X's gumdrops a bit. **by David Reynolds**

We've sunk to a new low—Gumby torture.

Photographer Stan Musilek focused on Apple's new keyboard and mouse for our cover.



REPRINTS
For reprints, contact RMS at 717-399-1900.

SUBSCRIPTION QUERIES
Please phone customer service toll-free at 888-771-6222.

Volume 6, Issue 1
MacAddict (ISSN 1088-548X) is published monthly by Imagine Media, Inc., 150 North Hill Dr., Brisbane, CA 94005, USA. Periodical-class postage paid at Brisbane, CA, and at additional mailing offices. Newsstand distribution is handled by Curtis Circulation Co. Basic subscription rates: one year (12 issues + 12 CD-ROMs) U.S. $39.90, Canada $43.95, U.S. prepaid funds only. Canadian price includes postage and GST 128220688. IPM 0962392. Outside the U.S. and Canada, price is $53.95, U.S. prepaid funds only. POSTMASTER: Send address changes to *MacAddict*, P. O. Box 58251, Boulder, CO 80328-8251. Imagine Media, Inc. also publishes *Maximum PC, Business 2.0, Games Business, Next Generation, digitalFOTO, PC Gamer,* and *PSM.* Entire contents copyright 2000, Imagine Media, Inc. All rights reserved. Reproduction in whole or in part is prohibited. Imagine Media, Inc. is not affiliated with the companies or products covered in *MacAddict*. Ride-Along, enclosed in the following editions: A4, B, B1, B2, PRODUCED IN THE UNITED STATES OF AMERICA.

contents

every month

8 Editor's Note
Do we get our insights from a crystal ball or a magic eight ball? You be the judge.

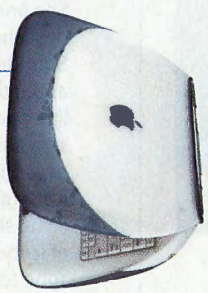
10 Letters
We read 'em and weep.

14 Get Info
We give you the lowdown on Apple's recent earnings stumble, preview the QuickTime 5...um...preview, tell you how to make a cheap PC Ethernet card work with your Mac, and tons more.

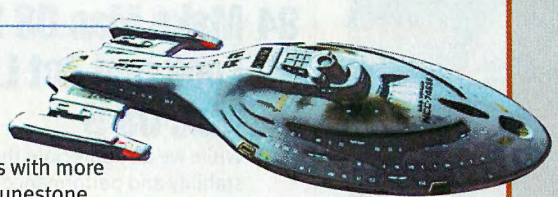
Look! New Sim furniture!

22 Scrapbook
For your enjoyment, we present a close look at the Mac OS X Public Beta developer's tools, freely downloadable from Apple. These tools are great for hacking in X, even if you're *not* a programmer.

46 Reviews
It's a devilish month in the *Reviews* section as we test out the triple six of Mac apps: Photoshop 6, BBEdit 6, and CodeWarrior Pro 6. On a less ominous note, we also pound on the new iBook SE, ATI Radeon AGP graphics card, Rio 600 MP3 player, Canon ZR10 digital video camera, and 100GB VST FireWire RAID Array. Plus we check out Digi 001/ProTools LE 5.1, and much more.


We looked, no pearl inside.

72 Powerplay
The new gaming season is coming up, and we've got your guide to the hottest titles. We also take a look at Sin, a killer first-person shooter, and—for those who prefer their games with more brain and less brawn—we check out Runestone.


To boldly go where no spoon has gone before.

88 Ask Us
We bring relief to Macs with sleep disorders, password aphasia, and irrational desires for OTATalkServicesLib.

120 Shut Down
So who the hell *did* shoot J.R.? Wait...wrong dream.

Man, there are months when it's good to be a mascot instead of an editor. Bye-bye Balin! We're gonna miss ya.

MacAddict

THE TEAM

PUBLISHER **Peter Hirschfeld**
EDITOR IN CHIEF **Robert Capps**

EDITORIAL
EXECUTIVE EDITOR **David Reynolds (technology)**
MANAGING EDITOR **Jenifer Morgan**
SENIOR EDITOR **Cathy Lu (features)**
ASSOCIATE EDITORS **Narasu Rebbapragada (reviews), Ian Sammis**
DIGITAL MEDIA EDITOR **Andrew Tokuda**
CONTRIBUTING EDITORS **Raf Anzovin, Steven Anzovin, Joseph O. Holmes, Buz Zoller**

ART
ART DIRECTOR **David Ross**
ASSOCIATE ART DIRECTOR **Chris Imlay**
CREATIVE DIRECTOR **Wayne Allen**

MACADDICT.COM
PRODUCER **Niko Coucouvanis**
CONTENT EDITOR **Rich Pizor**

PRODUCTION
PRODUCTION DIRECTOR **Richard Lesovoy**
PRODUCTION COORDINATOR **Hans Hunt**
PRODUCTION MANAGER **Warren Baskin**

ADVERTISING
ASSOCIATE PUBLISHER **Don Kimenker**
REGIONAL AD MANAGER **Michelle Paredes**
SR. ACCOUNTS MANAGER, DIRECT SALES **Ana Epstein**
DIRECTOR OF MARKETING **Mary LaChapelle**
MARKETING MANAGER **Balin Brandt**
AD COORDINATOR **Matt Wheeland**
BUSINESS MANAGER **Doug Haynie**

CIRCULATION
GROUP CIRCULATION DIRECTOR **Kate Bailey**
CIRCULATION MANAGER **Jerry Murphy**
NEWSSTAND DIRECTOR **Eric Alekman**
NEWSSTAND SALES MANAGER **Jonathan Vernier**
ONLINE MARKETING MANAGER **Mayumi Stroy**
FULFILLMENT MANAGER **Peggy Mores**
SALES AND MARKETING COORDINATOR **Christopher Boily**
DIRECT MARKETING ASSISTANT **Alex Guzman**

imagine MEDIA WITH PASSION

Imagine Media, Inc.
150 North Hill Dr., Brisbane, CA 94005
(415) 468-4684, http://www.imaginemedia.com

Executive Chairman • Chris Anderson
President • Nancy W. O'Neill
Vice President/CFO • Tom Valentino
Vice President/Circulation • Holly Klingel
Vice President/HR • Steve Leibman
General Counsel • Charles Schug

IMAGINE BUSINESS DIVISION
President • Michela O'Connor
(Business 2.0)

IMAGINE COMPUTING DIVISION
President • Cheryl England
(MacAddict, Maximum PC, Maximum Linux, MacAddict Network, Maximum PC Network, digitalFOTO, T3)

IMAGINE ENTERTAINMENT DIVISION
President • Jonathan Simpson-Bint
(PC Gamer, PSM, Daily Radar, Next Generation, Games Business, Total Movie, Revolution, Dreamcast Magazine)

Imagine Media is aimed at people who have a passion. A passion for games. For business. For computers. Or for the Internet. These are passions we share. Our goal is to feed your passion with the greatest magazines, Web sites, and CD-ROMs imaginable. We love to innovate, we love to have fun, and we have a cast-iron rule always to deliver spectacular editorial value. That means doing whatever it takes to give you the information you need. With any luck, we'll even make you smile sometimes...Thanks for joining us.

Imagine Media Inc. is part of The Future Network plc.
The Future Network plc serves the information needs of groups of people who share a passion. We aim to satisfy their passion by creating magazines and Web sites that offer superb value for money, trustworthy information, multiple ways to save time and money, and are a pleasure to read or visit. This simple strategy has helped create one of the fastest-growing media companies in the world: we publish more than 100 magazines, 20 magazine Web sites, and a number of Web networks from offices in five countries. The company also licenses 42 magazines in 30 countries. The Future Network is a public company quoted on the London Stock Exchange (symbol: FNET).

THE future NETWORK
Media with Passion
Bath London Milan Munich New York Paris San Francisco

Chairman Chris Anderson
Chief Executive Greg Ingham
Tel +44 1225 442244
www.thefuturenetwork.plc.uk

SERVICE. RELIABILITY. PRICE.

Pick any three.
Web hosting starting at $19.95

You want it all? This is the place. Our broad range of solutions includes everything from shared hosting to dedicated and high-availability hosting to Web site design, all at an unbeatable value. That's why we're rated #1 by *PC Magazine* and *Windows NT Magazine*. So whether you're already on the Web or ready to get started, call us to learn how we can make the Web work for you today, and grow with you well into the future.

The Interland Standard

- 30-day, money-back guarantee
- 99.9% uptime
- 24/7 toll-free support
- 150 MB starting at $19.95
- E-mail accounts for your Web site

Call Today Toll Free

877.887.4913

www.interland.com
NASDAQ: ILND

PC MAGAZINE EDITORS' CHOICE December 1, 1999

LAB EDITOR'S CHOICE September, 1999

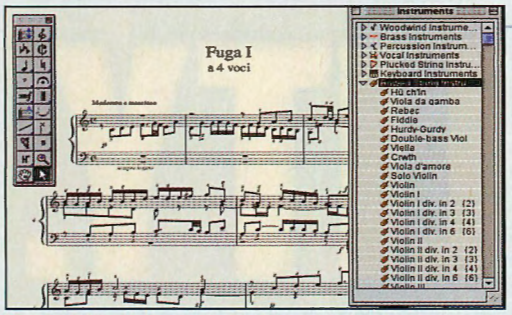
CIO The CIO 100 HONOREE 2000

WINNER Inc./Cisco Growing with Technology Awards 2000

@interland®
We make the Web work for you.™

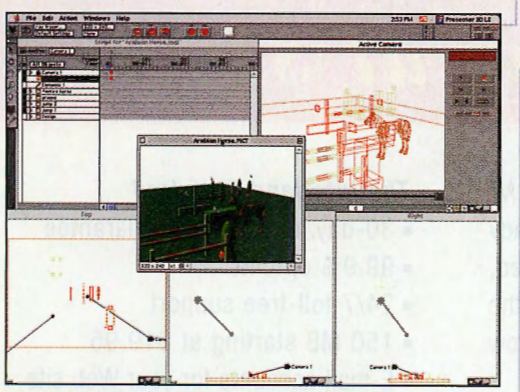
Copyright 2000 Interland®, Inc. All rights reserved.

Celebrate the New Year with a New Disc



You don't have to break the bank to score the big time.

It's the answer for all those adventurous wannabe videographers who are ready to move beyond iMovie's limits.



This simple yet powerful 3D program targets 3D enthusiasts, students, and beginners.

In the 1980s, this game ranked among the best of the shoot-'em-ups, and it's still hella fun.

jam-packed for january

Igor Engraver 1.1

Any closet composers out there? Have you felt the urge to score the next *Star Wars* movie or arrange the Broadway version of *Saving Private Ryan,* but just didn't have the budget to buy your own notation and scoring program? Fret not! Igor Engraver by Noteheads is not only a full-featured composition and score tool, but also has the most attractive price tag imaginable—it's completely and utterly *free!*

Commotion 3.0 Demo

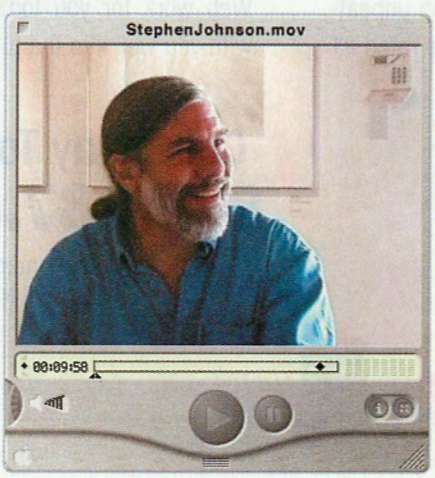
Commotion by Pinnacle Systems is the tool used by folks at ILM and other major movie houses and special effects studios. With this *Freakin' Awesome* workhorse application, you can do what the big boys and girls do—at a fraction of the cost and with twice the ease! Try out the demo included on The Disc and read the review in this issue.

VIDI Lite

Some of you 3D aficionados may remember the high-end 3D modeling and rendering program, VIDI Presenter and Model. The company is no longer with us, but VIDI's programs live on. In an effort to make 3D modeling and animation grow on the Mac platform, the Mac 3D Team has set up a Web site to accompany VIDI Lite (www.vidi.com/join.html), a free 3D application geared toward beginners and the education market. Let's keep 3D alive on the Mac!

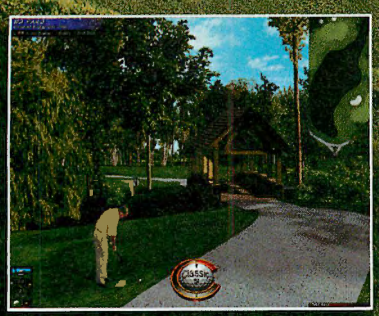
Native Assault 1.2.5

There's a certain charm about those classic coin-op games of the 1980s. Missile Command was arguably one of the twitchiest and most nerve-wracking of them all. Well, we've flown through the 1990s and dropped right into the new decade—and we're pleased to see the classic game reincarnated as Native Assault. The added element of strategy and resource management enhances gameplay—we're not just shooting for a high score this time.



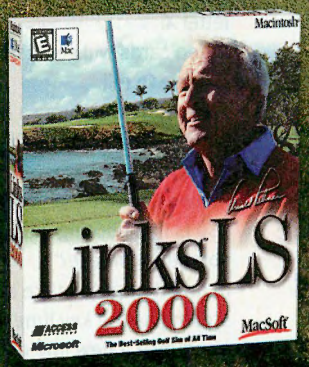
In this month's staff video, Stephen Johnson talks about the amazing potential of digital photography, his own deep-rooted love of nature, and his effort to capture its beauty through digital means.

Real courses. Real physics. Real ball control.



Fuzzy Zoeller joins Arnold Palmer and three other new golfers

Featuring St Andrews Old Course, plus five new courses



You'll feel like Links LS 2000 is the perfect reflection of your real golf game. And with six new courses (including the spectacular St Andrews Old Course), 35 modes-of-play, and "constructive criticism" from cutup golf announcer David Feherty, you've got plenty of opportunity to improve. Watch out for the rough!

EVERYONE E CONTENT RATED BY ESRB

Mac

ACCESS SOFTWARE Microsoft INFOGRAMES

MacSoft®

www.wizardworks.com/macsoft

©1999 Microsoft Corporation. All rights reserved. Microsoft and Links are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Published and distributed by Infogrames, Inc., under its MacSoft label. All other trademarks are the property of their respective owners.

editor's note

We know everything.

It's that time of year again, folks. Time for roasting chestnuts, putting on big red suits and giving out gifts, lurking beneath mistletoe in search of kisses, and drowning ourselves in eggnog until we think we can tell the future (hiccup). OK, fine—we don't own any chestnuts, red suits, or mistletoe, but we've got that last activity nailed. After many debates, some punching, and one nasty biting incident, we, the *MacAddict* staff, have assembled our yearly predictions. Here's what you can expect from 2001, the real first year of the millennium. Get ready, because you know we're never wrong.

- IBM will challenge Motorola to a fight to the finish over control of the PowerPC. A pair of tigers that Steve Jobs lets into the arena midway through the battle will kill them both. At the Expo keynote, Phil Schiller will subsequently demo which company got eaten faster.
- Parents will rally against the key lime iBook after a series of nasty schoolyard beatings, pants-ings, and wedgy-ings delivered to children toting the bright portable.
- The Apple Mouse will get a scroll wheel, but no second button.
- Jon Rubinstein will give Rob Capps a beating, pants-ing, and wedgy-ing when Rob asks him why the Apple mouse still has no second button.
- Apple will sue several prominent adult-film producers, claiming they disparaged the letter *X*.
- Video cards will get faster and no one will be able to tell.
- Steve Jobs will throw a hissy fit over whether to name the first OS X update OS X.1 or OS X.1.
- Millions of Mac users will utter the phrase, "So is this booting into Classic now, or did something freeze?"
- In an attempt to make a product as striking as the key lime iBook, Dell will announce a new line of neon PCs dubbed "The Radical."
- Adobe will start bundling computers with Photoshop.
- Amazon.com will stay in business.
- Oni still won't ship.
- Apple will continue to lead the computer world into more and more improbable case designs, leaving everyone ripe for the great "retro back-to-beige" trap the company's planning to spring around 2006.

Where in the world is Rob-o Cappsaigo?

- The iBorg will become fully functional.
- In the interests of strict accuracy, the Western world will relabel the months of September through December as November, December, Undecember, and Dodecember. Conservatives in Congress will filibuster the renaming of February to Bicember and June to Hexember.
- Compaq will team up with Revlon to create Lee Press-On Translucent Panels. Users will swear they "almost look like natural Macs."
- Apple's stock price will gyrate wildly, causing one analyst to switch from the adjective *beleaguered* to *stunning* so many times that his friends check him into a clinic.
- Steve Jobs and Larry Ellison will receive bad press for leaving burning bags filled with dog droppings on Bill Gates's front step, ringing the doorbell, and hiding behind a tree.
- Microsoft's antitrust case will not end.
- Motorola will announce a 2GHz processor at next October's microprocessor forum. The company's representative will leap into a secret escape pod before anyone has a chance to ask when the G4 will finally break 500MHz.
- Jonathan Ive will suffer a nervous breakdown after Steve Jobs asks him to design a translucent, fanless, quad-processor six-slot network server with redundant power supplies that fits into a shoebox.
- Apple, in an attempt to broaden its appeal to the higher-education market, will release its consumer-level symbolic computation package, iMatica.
- We'll see Quad-processor G4s.

Staff Rants

David Reynolds

Executive Editor

Q. *What do you predict for* MacAddict *in 2001?*

A. After discovering a large monolith on the moon, we'll launch a probe that travels to Jupiter in search of Stanley Kubrick.

Q. *If you were to go insane, what type of insanity would it be?*

A. I'd like to think I'd be a mumbling, raving lunatic, but I suspect my deep paranoia over browser cookies would just get worse.

Jenifer Morgan

Managing Editor

Q. *What do you predict for* MacAddict *in 2001?*

A. The entire staff, one by one, will begin intentionally washing their pants in the Hot cycle and drying them on the Sturdy Permapress setting in an effort to look more like Chris Imlay.

Q. *If you were to go insane, what type of insanity would it be?*

A. I'd strike a mini-xylophone and say in a lilting voice every half-minute, correcting the time as it changes: "At the sound of the tone, the time will be...7:34 and one-half."

Ian Sammis

Associate Editor

Q. *What do you predict for* MacAddict *in 2001?*

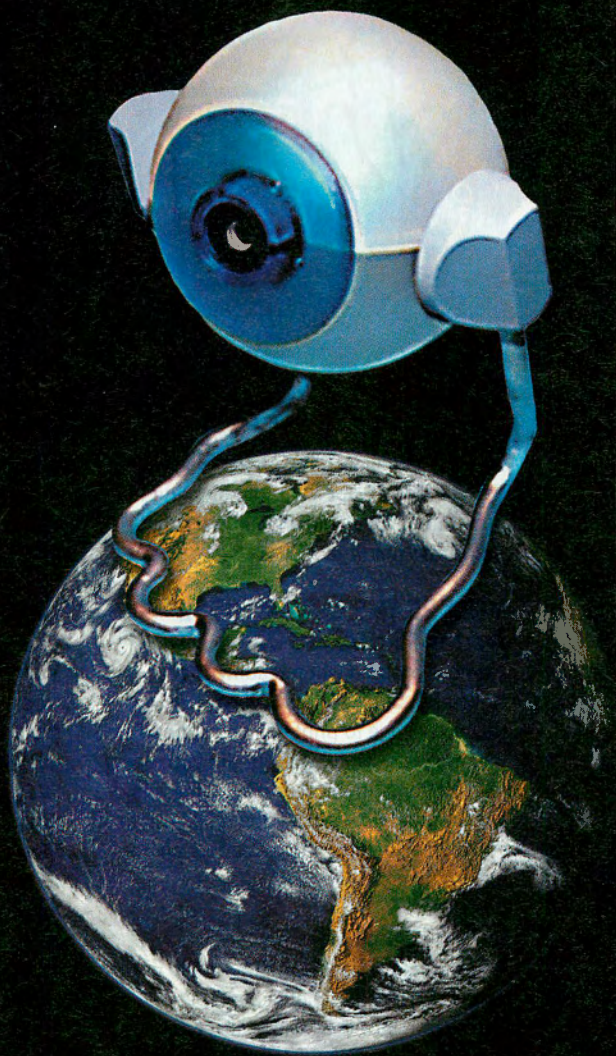
A. I predict that *MacAddict* will get really strange around May as we try to handle the OS X transition.

Q. *If you were to go insane, what type of insanity would it be?*

A. I'd go chart-crazy—I'd just sit at my machine, generating pages and pages of charts that I would insist demonstrated something interesting. If provoked, I'd start fitting random functions to my data set and insist that if the plot didn't convince you, the best fit *really* proved my point.

"HOUSTON..."

"THE iBOT™ HAS LANDED."



THE FASTEST WEB CAM ON EARTH

Orange Micro is first to market with the iBOT, a FireWire-based desktop video camera. iBOT harnesses the speed and power of FireWire unmatched by the slower USB-based web cams. In fact, the inexpensive iBOT uses the same IEEE 1394 technology built into pricey DV camcorders costing over 7 times as much. Orange Micro's iBOT is the desktop video camera for the rest of us, providing crisp, clear video at a price you can afford. (640x480 @ 30 fps)

The iBOT supports all known software for the following applications: simple video editing, presentations, video teleconferencing, video e-mail, and video monitoring / surveillance. The iBOT pro version includes a microphone and additional free software.

FireWire | Microsoft Windows Compatible | Mac | QuickTime

Orange Micro inc.

www.orangemicro.com

© 2000 Orange Micro Inc.

letters

We feel like we know you.

There's a Cube on the cacti on the mound in the zoo at the bottom of the sea...

ILLUSTRATION BY DAVID "I HATE ROB" ROSS

WRITE TO US: *MacAddict*, 150 North Hill Dr., Brisbane, CA 94005, or email to letters@macaddict.com.
FOR CD PROBLEMS: Go to http://support.imaginemedia.com.
FOR SUBSCRIPTION QUERIES: Call (toll-free) 888-771-6222.

MOVE TO THE ZOO

I was surprised to learn that Apple does not recommend operation of the G4 Cube below sea level. Inasmuch as the entire city of New Orleans lies below sea level, with the exception of a constructed mound in the middle of the zoo, which I used to ride down on my bike, that limitation will cut seriously into Mac sales in this part of the world.
—Robert L. Cabes

NOW WE FEEL OLD

Hey, I was watching *Dark Angel* on Fox one night, and my dad noticed that when the hacker character opened a list of prison records, the person he was looking for was in cell block G4. Then I noticed the hacker was using a PowerMac G4 keyboard. Coincidence? I think not. I believe we have on our hands a writer who uses a Mac.

Recently Sighted

The ultimate Mac lab accessory—the *MacAddict* minifridge! My boyfriend and I just used creative masking and a few cans of spray paint to create the Happy Mac design.
—Staci Trekles

Bringin' you ice, ice, baby.

P.S. I'm still working on getting that darned Mac SE open without mauling the poor thing. It's as old as I am, ya know.
—Ryan Wilson (age 16)

YOU'RE THE ONE WHOSE NAME IS STARBUCK

I almost vomited when reading the November 2000 *Letters*. It's bad enough that you chose to print some dittohead's meaningless ramblings, but did you really have to compliment that disgusting, illogical lump of lard, Rush Limbaugh? I think you owe all of your liberal readers an apology.—*Walter F. Starbuck*

LOVE STINKS

When I met my boyfriend almost two years ago, all he had was a stinking IBM ThinkPad. Since then I have successfully impressed upon him the superiority of the Mac. Yesterday he got a lovely purple iMac DV loaded with all kinds of cool stuff. This is not fair, since I am still using my beloved old Performa 6400. Do you think I should kill him and steal his machine?—*Deb Grove*
Yes.—Ed.

FLOGGING IS SO 1400S

I think a terrorist from Redmond has infiltrated the *MacAddict* camps. Flipping through the pages of the November issue, I spied on page 4 a full-page ad for Adobe GoLive and LiveMotion. While I was staring at the ad, I noticed that both programs are Windows versions (see the lower-left corner of each box)! Egads! My favorite Mac-loving magazine has an ad for Windows versions of Web software. Blech! Find the traitor in your midst, and cast him or her away after a good flogging with a new Apple Pro Mouse.
—Chris Rice

WHAT HAVE WE DONE?!

I just wanted to drop you guys a line and say that I truly enjoy doing some of the hardware hacks Ian and Dave accomplish—I've even started my own version of the iBorg using a PowerBook G3/233. I hope they continue to write these how-to articles, as well as the section on getting PC hardware to work with a Mac.—*Collin Allen*

FOR AN ANARCHICAL APPLE MENU

I just discovered an obscure but previously unknown (to me, anyway) feature of OS 9 (it probably applies to previous versions, too). If you make an alias of a folder or hard drive, put a hyphen (-) in front of its name, and move it to the Apple Menu Items folder, you can't view its contents hierarchically. Remove the hyphen and you can view its contents as usual. I don't know why this is the case or how it's useful, but I felt the need to share it with the Mac community.
—Matthew Raider

THE SAME REASON YOU SHAVED YOURS

Not more than a week had gone by when I received my November copy of *MacAddict*—

a week, that is, since I, too, shaved my goatee. I was struck by the coincidence of the *Editor's Note* caption, which reads, "Rob no longer has hair on his chinny chin chin." I guess this means Rob shaved as well—probably months before I did, knowing the kind of publishing schedule *MacAddict* must have. Still, I can't help wondering why Rob shaved his goatee.—*Jonathan Bare*

THE KEY TO THE CD

I hope my experience will save lots of people a great deal of frustration and confusion when they're installing Office for Mac. The installation process asks for a product code. A slew of numbers appears on the package, but none of them is the one the installer wants, nor are there any instructions on where to find it (other than going to the Microsoft Web site). So here is the clue: On the flip side of the sleeve that holds the program CD, you'll find an orange sticker with a key symbol, the words *CD Key,* and a set of numbers. After you put those numbers into the boxes, the actual serial number (the product code) appears onscreen.—*Raeann Gooch*

DROO, DID YOU WRITE THIS?

There's no digital droo stuff on Napster! The world is ending!—*Macman824@aol.com*

THAT'S A LOT OF COKE

I noticed in your staff video that the soda-vending machine charges only 25 cents. Sweet! I gotta get a job with you guys. My office machine charges 60 cents. Just think how much I could save for that 256MB RAM chip I want on my iBook.—*Adam Codega*

IAN'S QUAKING IN HIS BOOTS

We all know about"Frag the Editors Friday" (what Mac addict doesn't?), but will we ever have a chance to Quake the editors? What about us poor people who have Quake III Arena, but don't want to put up $50 for Unreal Tourney as well? C'mon! Help a fellow Mac addict who wants to scatter Ian's guts all over the floor without paying for more software. (Sorry, Ian.)—*Brook Willard*
So be it. Keep an eye out for a "Quake the Editors Friday" soon.—Ed.

XCELLENT IDEA

It would be nice if the *Requirements* listings in the *MacAddict Reviews* section included whether an application meets Classic, Carbon, and Cocoa guidelines.—*John Kryst*

FRIENDS ARE EPHEMERAL

My friends all have PCs, and they're all online playing Half-Life Counter-Strike. They've formed a clan, and now I feel really left out.

Should I buy a PC, or look for new friends?—*Patrick Stevens*

HAPPY NOW?

Have you ever noticed that *MacAddict* reviews go one of two ways? If a company puts an advertisement for its product in the magazine, a favorable review always follows, no matter what the product actually does. If a company does not advertise, the product usually doesn't get a review at all, or gets totally slaughtered. This is biased journalism—the bias works in favor of the people who give you money. I work at a newspaper, and we publish every letter to the editor we receive. If there isn't enough room, we try to balance out the good and the bad. Have you ever noticed that you never publish negative letters?—*Andrew McVinnie*
We write and edit the MacAddict Reviews *section before we even know which companies are advertising in the magazine. The* Reviews *section is in no way influenced by advertising.*—Ed.

BETTER OFF DEAD

Well, I did my own Sims experiment. My warped family consisted of Twisted (a guy), Funky (a girl), Goofy (a guy), and Speedy (a child). I made a house with four beds, a fridge, a counter, a toilet and shower, a table, and four chairs. First Funky found a job as a mascot, but she got fired three days later. Then Speedy went to military school after playing hookie. Then Twisted and Funky grew to hate each other so much that Twisted left. After Goofy and Funky ran out of money, I sold the fridge and the toilet. Then Goofy died. I sold his bed and scraped up enough money to buy a grill. The first time Funky used it, she burnt down the house and died, too.
—*Cameron Sullivan*

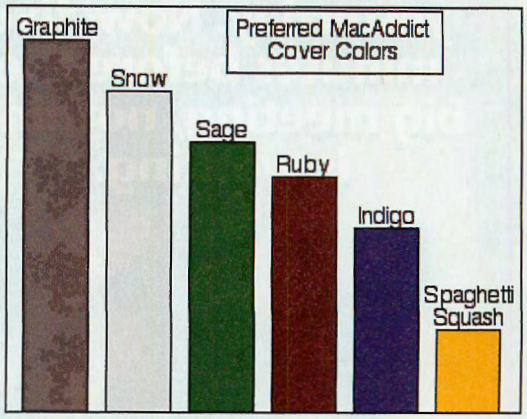
WE'RE KLEEN OUT OF EXCUSES

I was really surprised to see that the list of "Top 5 Things the G4 Cube Is Mistaken For" did not contain what I considered the most obvious choice: a tissue box.

How many times have I seen a square Kleenex box atop a counter? A toilet tank? In the back of a car? How did this obvious resemblance manage to escape your list?
—*Jim Charles*

YOU'RE SQUASHING OUR EGO

The October and November issues both sported a yucky yellow-orange color scheme. You didn't release either one



You forgot to mention cauliflower beige.

anywhere near Halloween. My research indicates that *MacAddict* readers would much rather see the depiction of Apple-related colors on the cover of this grand publication. There's a reason Apple designers didn't venture into vegetable themes.—*Dan Craven*

AND NANCY SINATRA WROTE THAT BOOTS SONG, RIGHT?

I just read "Songs Rejected for New iMac Commercials" (*Shut Down,* Nov/00, p120) and saw that you credited the classic Procol Harum tune "A Whiter Shade of Pale" to Annie Lennox. That's tantamount to crediting "Mrs. Robinson" to the Lemonheads, or "Sympathy for the Devil" to Natalie Merchant. Woo woo! Coo coo ca-choo!
—*David Baker*

IT'S TIME TO MOVE ON

I miss Kathy Tafel. And Wade. And Nikki. And Kris.—*B.J. Gatten*

THIS IS NOT A COMPLIMENT

First, let me say that I'm going insane. I like your magazine *so* much that it has driven me into a state of mental craziness. Every day I think about the magazine. It's hoohoo funny, hee informative, and hooheehah interesting. Heehoohahahawheehoo. Heeheehoo! Hoohawheeheeteehee.—*The Crazy One*

YOUR DERRIERE'S THERE

I would love to see my rear end in your magazine.—*Scott Smith*

"Everything worked fine yesterday. Now, five minutes before the big meeting, nothing is working."

Big problem? No problem! Just Rewind to yesterday!

Rewind

Reverse Disasters and Mistakes...Guaranteed!

With one click, Rewind™ takes you back to happier times. Remember when everything worked and life was good – before tragedy struck? By tracking every change you make, Rewind can take you back in time to previous systems, preferences, or any file versions. Better than backup, it's quicker, more current, continuous, and complete. Rewind even offers an emergency startup mode to get you up and running in seconds, even without a System CD. Best of all, you won't see any performance hit and Rewind needs as little as 5% of your disk space. Remember: In a Bind? Click Rewind!

MacWEEK.com BEST OF SHOW macworld expo ny 2000

POWER ON SOFTWARE
The POWER of Productivity.

Phone: 800-344-9160 or 614-413-4000
email: sales@poweronsoftware.com
http://www.poweronsoftware.com/macaddict

Please, don't turn right.

WHAT PARODY?

I'm one of your charter subscribers. I was finishing up my October issue when I got to the *Shut Down* page. I had been thinking that the humor factor had gone downhill over time, but I burst out laughing at the *Mac's Health* cover. I'm a graphic designer at Rodale, publisher of *Men's Health*. You *nailed* the parody.

By the way, I like the redesign, but I'm not sure about the tiny sans-serif font for the body copy. The leading helps, but it's just too small for comfortable reading. Bump up both the size and the leading half a point, and you'd make me a little happier. *—Judy (no relation to art director David) Ross*

SOMETHING'S ASKEW

The following discovery recently came to my attention. CompUSA assigns all its products a six-digit SKU number. Of all the products in the entire Mac section, only three have the numbers "666" appearing in succession in their SKUs. The first product is an obvious one: the hybrid CD for the original Diablo—no surprises there. The second two are Connectix Virtual PC for Windows 95 and 98. Is it just me, or is this too eerie? *—Hyperjon (a CompUSA employee)*

BUT STEVE JOBS MAKES $1

While listening to NPR recently, I heard an interesting story about the biggest names in Silicon Valley and whom they were supporting for president. I was thinking, "Duh, like these dot-com billionaires will give their money to anyone who's not promising them a huge tax cut." Then the program started listing the people who supported Al Gore, and guess who the first one was—Steve Jobs. It renews one's faith. *—MAtredie@aol.com*

TASTELESS

Your picture displaying a use for the puck mouse (*Get Info*, Nov/00, p16) was *way uncool* to this Black reader of your (usually) fine magazine. It was simply a display of racism and insensitivity. You stooped really low to get a laugh. You didn't get one from me.*—Charmaine E. Gordon*
We apologize. We did not wish to get a laugh at the expense of anyone's culture. We were mostly amazed at the potential (mis)use of Photoshop.—Ed.

WHAT A TANGLED WEB YOU WEAVE

After waiting almost a month to get my G4 Cube, I had built up a lot of expectations, but I ran across a problem: real bugs in the system. It came with two black beetles (I think they were trying to start a family) and a nice little spider. You thought I meant hardware/software bugs, didn't you? The spider is still in there though. I can't get him out. Maybe I should call Norton, or is that Orkin?*—Sam Centellas*

You Know You're a Mac Addict When...

...you realize your blood isn't red—it's ruby.*—vtwin 0001*

...you won't sell an old car because it has your original Apple Computer sticker in the rear window. *—Garth Hansen*

...you change your desktop more often than your underwear.*—Anonymous*

...drinking Cocoa makes you feel cutting-edge.*—Jonathan Claydon*

...your last name is Bonde (pronounced Bondi).*—William Bonde*

...you reach for the Undo button when brushing your hair. *—Benjamin Warren*

ASSIMILATE THIS.

STAR TREK VOYAGER® ELITE FORCE™

SET PHASERS™ TO FRAG

Mac

RAVEN

Paramount A VIACOM COMPANY

ACTIVISION

westlake INTERACTIVE

POWERED BY QUAKE III

TEEN T CONTENT RATED BY ESRB

ASPYR™

www.ravensoft.com WWW.ASPYR.COM www.startrek.com

TM, ®, & © 2000 Paramount Pictures. All rights reserved. Star Trek, Star Trek: Voyager and related marks are trademarks of Paramount Pictures. This product contains software technology licensed from Id Software, Inc. Id Technology © 1999, 2000 Id Software, Inc. All rights reserved. © 2000 Activision, Inc. and its affiliates. Activision is a registered trademark of Activision, Inc. and its affiliates. All rights reserved. The ratings icon is a trademark of the Interactive Digital Software Association. The Aspyr Media logo is a trademark of Aspyr Media, Inc. Macintosh and the MacOS logo are trademarks of Apple Computer, Inc. All other trademarks are the property of their respective holders.

get info

When words collide, we're here to clean up.

Too Many Cubes

It's Still a Profit, but the Revenue is Small

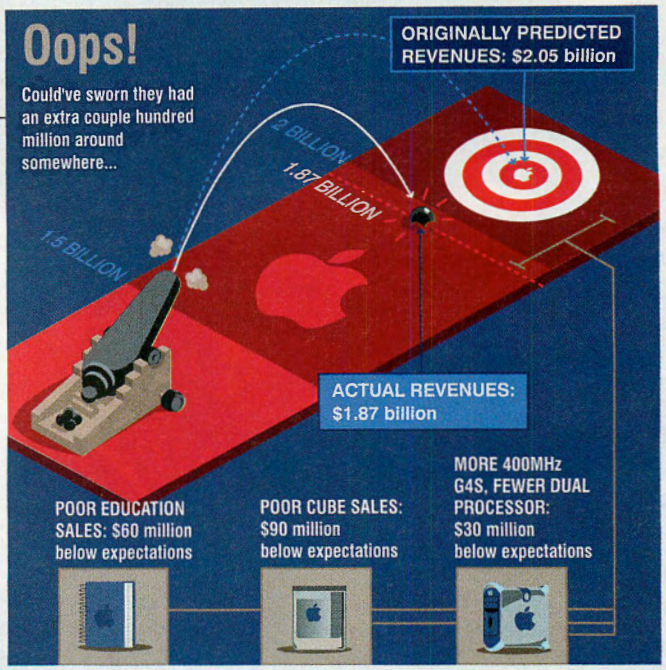


ILLUSTRATION BY XPLANE.COM

Folks who invest in Apple (the company itself, not the hardware) haven't been enjoying the end of 2000. After doing better than anyone expected for two solid years, Apple finally reverted to form last October, glutting the channel with an unpopular model and fiddling with its sales methods at the worst possible time. The result was a fourth-quarter net profit of only $108 million from operations, along with $47 million from sales of still more of its apparently inexhaustible supply of ARM stock (ARM, the company that made the processors for the Newton, has increased in value about 15 times since its initial public offering back in 1998).

Apple's chief financial officer, Fred Anderson, attributed the teeny-weeny-itsy-bitsy-tiny-lower-than-expected profit to three problems. The biggest was a huge shortfall in Cube sales—Apple sold $90 million worth of Cubes less than expected. Apple also attempted to change the way it sells computers to schools just as the schools were attempting to buy computers for the next school year. This rather frustrating tactic didn't go over very well—Apple sold $60 million less than expected in the education market. Finally, the folks who bought G4s ended up buying far more of the low-end 400MHz models than anticipated, eschewing the more expensive dual-processor options. This lowered Apple's revenues by another $30 million.

The Cube affair is the most serious of Apple's woes, as that problem didn't end with the quarter. Because the Cubes didn't sell well, many are still sitting unsold in stores—meaning Apple won't sell nearly so many machines next quarter. That should sound alarmingly familiar to longtime Mac aficionados. A similar problem around Christmas 1995 eventually cost Apple over a billion dollars and led to the familiar news stories that always began with the phrase "Beleaguered Apple Computer..." Fortunately, this time around it won't be so bad, thanks to two of Gil Amelio's enduring legacies. Apple now has vast cash reserves, and a management sharp enough to nip a situation such as this in the bud. To prevent an unpleasant problem from turning into a total debacle, Apple plans to take the entire hit next quarter—so expect those results to suffer as the company clears out its channel backlog.

The good news is that the disappointing results prompted Steve Jobs to discuss Apple's future far more openly than usual. He acknowledged that the "megahertz gap" is costing Apple sales. The fact that its systems run on 500MHz chips, as opposed to the 1GHz chips on PCs, makes the public view them in a poor light, regardless of the chips' actual performance. He promised to meet with Motorola to try to remedy this situation.

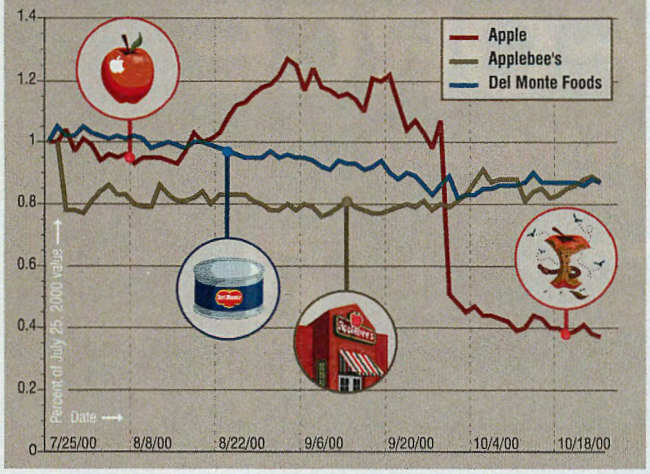
Jobs also announced that Apple plans at least two more iMovie-style applications, and finally revealed how the Mac OS X Public Beta is doing—60,000 copies as of October, with about 500 more sold each day.

Of course, for those of us who suffered through the "you can take my Mac when you pry it..." days, it's hard to feel too unhappy about any quarter in which Apple made a profit and sold over a million Macs. Only two years ago, we would have been ecstatic to see numbers like these.—*IS*

Bad to the Core?

Doing an Apples-to-apples comparison

After being forced to read every financial writer's personal favorite "Apple" pun, we thought we'd see how Apple was doing relative to some other apples. Unfortunately, we couldn't find an apple doing worse. Here's how Apple's stock performed compared to Applebee's and Del Monte Foods, a major produce distributor.



Sublime QuickTime

Meta-Multimedia Technology Turns 5 in Public Preview

QuickTime—Apple's secret plan to take over the universe—reached version 5 in a public preview released during the annual QuickTime Live conference. The new version of QuickTime is chock-full of new codecs (methods of encoding and decoding images and video). It also includes a brand-new player program that addresses users' criticisms of version 4, and more nifty new features.

The best part of QuickTime 5 is the player. After Apple got a pounding from loyal QuickTime users who hated the QuickTime 4 player, the company took their—er, suggestions to heart and created a new and improved player. It features a volume slider (instead of a dial), a revamped Favorites drawer, better control buttons, and an Aqua-esque set of window widgets.

But it's the technology behind the player that's most impressive. The reason QuickTime 5 will continue to dominate is that it can subsume just about any multimedia format by including that technology in its architecture. QuickTime 5 has a few examples of this approach in its ability to play MPEG 1–encoded content (used most typically by universities and the seedier side of the Internet), as well as ShoutCast MP3 audio streams (popular in Internet-based radio).

QuickTime 5 also understands Flash 4 content, so you can play the newest Flash-based movies in the QuickTime Player. Finally, the latest release handles cubic QuickTime VR panoramas (meaning you can look up and down as well as around), which are nothing short of spectacular.

Finally QuickTime 5 (when playing a stream from a version 3 QuickTime Streaming Server) has some intelligent caching stuff going on, so viewing that stream should be a smooth ride.

Currently, QuickTime 5 is in preview release and won't be finished until early 2001. In the meantime, Apple plans on releasing a Windows version of the preview so our impoverished cousins can have a multimedia-rich experience, too. Users of the Pro version of QuickTime 3 or 4 can use all of version 5's abilities during the preview period, but when the final version ships, we'll all need to pony up $29.95 to keep those features. Otherwise, we can play QuickTime content, but we can't use the full spectrum of version 5's abilities.—*DR*

Apple has listened to the suggestions it received when QuickTime 4 came out. The result is a new QuickTime 5 Player. Here's a look.

Aqua-esque widgets—QuickTime 5 puts Aqua window controls in the QuickTime Player. We haven't yet figured out what the yellow button does. We click it and nothing happens.

Volume slider—It's a slider, not a knob! Finally! This widget will answer the harshest QuickTime 4 critics.

Better buttons—QuickTime 5 Player features five control buttons instead of two, and each has a unique function (the two buttons in QuickTime 4 Player effectively did the same thing).

QuickTime TV—A click of this button brings up the two-tabbed QuickTime TV and Favorites window *inside* the player's content area. This time it's scrollable, too.

QuickTime Factoids

- QuickTime 5 for the Mac requires System 7.5.5 or later, 32MB of RAM, and a PowerPC processor.
- A Windows version of QuickTime 5 preview will come out in late 2000; the gold master is slated for early 2001.
- A Pro version will be available for $29.95.
- Those who have the Pro version of QuickTime 3 or 4 will get the Pro version of QuickTime 5 during the public preview, but when the final version comes out, they'll have to pay $29.95 or stick with the basic version.
- There are more installations of QuickTime in Windows than in the Mac OS.
- Each day, 11 software titles license QuickTime for use.
- The QuickTime Web page on Apple's site is sometimes responsible for more than half of Apple.com's traffic.

drool worthy

SoundSpace 12

Nakamichi	www.nakamichi.com	$6,500

OK, we *know* this isn't exactly a Macintosh product, but it's just so cool-looking, we had to include it here. The SoundSpace 12, from Nakamichi (310-631-2122), features two subwoofers, five speakers, a tuner with AV inputs and outputs that also handles Dolby and DTS audio, and even two remote controls. It has two audio CD drives and a DVD-Video drive for your home theater enjoyment. Want to play Quake III Arena with the *right* kind of audio? Just plug your Mac into this system and get ready to rumble. If you just can't stand not owning one, call Nakamichi and drop some cash. The stand is included.—*DR*

PHOTOGRAPH COURTESY OF NAKAMICHI

You'll be the envy of every audio geek out there, but you'll be $6K lighter.

Studio

Formac	www.formac.com	Less than $500

We've been dying to show off this little beauty ever since seeing a prototype this summer at Macworld Expo in New York. The Studio, from Formac (877-436-7622), is a FireWire device that digitizes just about every kind of video and audio feed from any source—including, say, the S-Video source from a DVD player—and it does all this at 30 fps, full-screen mode. The Studio also includes a built-in TV and FM radio tuner for pulling your favorite songs out of the ether. If you're planning to do serious video work, give this hardware a look.—*DR*

IMAGE COURTESY OF FORMAC

This is a 3D image of Formac Studio—the final plastics are being finished as this is written.

TECH info TIDBITS Random Notes from the TIL

This Month, We Bring You Tidbits Related to Mac OS X Public Beta

- An activated Caps Lock key can prevent you from dragging items in a Cocoa application. If you're trying to drag an item such as a Mail message, and it won't budge, press the Caps Lock key to turn it off.
- Although Mac OS X Public Beta works fine with two monitors, its Classic environment can't deal gracefully at all with three or more monitors—it misplaces the menu bar. For now, you'll have to live with one or two monitors; Apple plans to fix this in a future release.
- If you're having trouble launching a program from a Universal Disk Format volume, move it to an HFS+ volume and it should launch fine.
- Disk First Aid 8.5.5 or earlier sometimes reports a MountCheck error when looking at a Mac OS X Public Beta startup disk. When you try to repair the problem, you find that—although Disk First Aid reports it as fixed—the error persists. This isn't an actual error; rather, it's caused by Disk First Aid's failure to understand some information that Mac OS X Public Beta uses to manage volumes. If you run across *other* errors, though, you should treat them as such and attempt to fix them using the appropriate utility.
- When you're using the Extensions Manager in the Classic environment, the Restart button doesn't work. If you need to restart the Classic environment after changing its extensions, close the Extensions Manager and choose Restart Classic Environment from the Environment menu.

These tech tips are brought to you from Apple's Tech Info Library. Visit the TIL at http://til.info.apple.com for all kinds of great information.—*DR*

We've Got Your Hub Settings Right Here

A Solution for Those Plagued by Problematic Networking

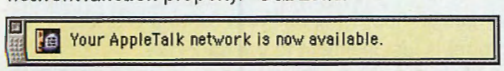
If you've recently replaced an Ethernet hub or two in your network, and you find that newer Macs (such as iMacs and G4s) have trouble accessing the network, we may have a solution—but it requires a little history.

Today's hubs are smart hubs, meaning they're programmable—and that's where the trouble starts. If you program the network switches (or hubs) correctly, the network will work more efficiently, and hence faster. When things go wrong with switches and routers, it almost always comes down to bad network-hardware configuration. This is where newer Macs come in—they face two potential problems in terms of configuring these smart hubs.

The most common hub problem involves autonegotiation. In the past few years, Macs have included Ethernet ports capable of connecting at more than one speed. Modern Macs can talk at 10Mb, 100Mb, and now, with the new gigabit G4s, 1,000Mb speeds. If your network has only 10Mb hubs, then the computers connect to the network at 10Mb. If your network has 100Mb hubs, then your Mac should connect at 100Mb. With the new multispeed switches and hubs, though, it's not so straightforward. The computer and the switch must now negotiate a common speed, as modems do, and this negotiation can cause network problems.

In a dysfunctional situation, you should set the ports on the hub to a fixed speed, one that all the computers connected to that switch can use. For example, if you set a port speed to 100Mb, then a Mac capable of 100Mb will not try to negotiate a speed—it'll just connect at 100Mb, which solves the problem, because the Mac doesn't *have* to negotiate a speed.

A second common hub problem occurs with the activation of Spanning Tree Protocol on the hub's ports. This protocol doesn't work properly with AppleTalk. Unfortunately, network consultants commonly lack training on the Mac platform, and they tend to blame the Mac for *their* lack of understanding. By disabling the autonegotiation and Spanning Tree functions, you have a good chance of making both your hubs and your network function properly.—*Buz Zoller*



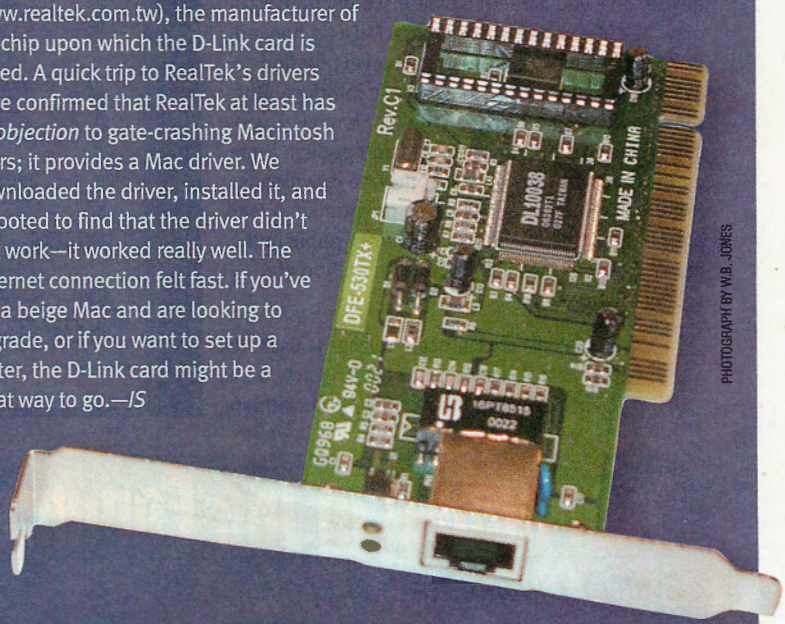
This little error notification is the best you can expect with Spanning Tree Protocol enabled. In some cases modern Macs boot too fast for this protocol, so the network doesn't come up until after the Mac has booted.

HACKitIN Making Stuff Work by Any Means Necessary

The D-Link Fast Ethernet Card (DFE530TX+)

The lack of cheap Fast Ethernet cards for the Mac has been a long-time irritant for Mac users. If you've got a beige G3, you can probably remember the sense of frustration you felt after your last trip to CompUSA or Fry's—with row after row of dirt-cheap Fast Ethernet cards and not a Mac driver in sight, it can feel as though those of us from the pre-iMac days never got an invitation to the 100-Mbps party.

We finally couldn't take it anymore (and no one invited us to any other parties, either), so we ran out and bought a D-Link Fast Ethernet card (if you're into product numbers, a DFE530TX+) for just over $20. A quick trip to D-Link's Web site (www.dlink.com) confirmed that the company doesn't provide Macintosh drivers. Salvation came from the open-source Linux driver that it *does* provide, which came bearing the moniker "rtc8139.c." The rtc stands for RealTek Corporation (www.realtek.com.tw), the manufacturer of the chip upon which the D-Link card is based. A quick trip to RealTek's drivers page confirmed that RealTek at least has no *objection* to gate-crashing Macintosh users; it provides a Mac driver. We downloaded the driver, installed it, and rebooted to find that the driver didn't just work—it worked really well. The Ethernet connection felt fast. If you've got a beige Mac and are looking to upgrade, or if you want to set up a router, the D-Link card might be a great way to go.—*IS*



PHOTOGRAPH BY W.B. JONES

Find Mac drivers for RealTek 8139–based Fast Ethernet cards on The Disc.

It's cheap, it's easy, and it's fast. Hmmm... that doesn't sound quite right somehow.

Search the Entire MacAddict Network

And All from the Convenience of Sherlock

Just because he's an amazing Mac techie and all-around nice guy, Ian Sammis hand-coded 18 Sherlock plug-ins that let you search the entire MacAddict Network of Web sites. These plug-ins cover the current lineup of Web sites in the network, including MacMilitia (www.macmilitia.com), As the Apple Turns (www.appleturns.com), and MacInstruct (www.macinstruct.com). Because sites come and go, the actual lineup of MacAddict Network sites may differ from the ones listed in the Sherlock plug-ins folder, which you can grab from MacAddict.com. You can also grab the plug-ins from The Disc.—*DR*

Find the MacAddict Network plug-ins on The Disc.

Shareware Pick of the Month

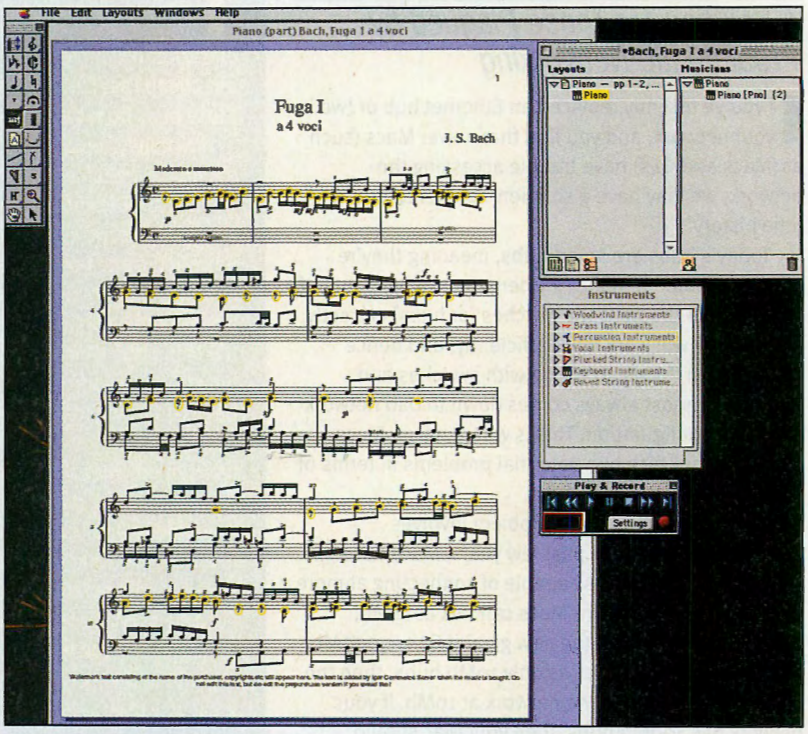
Igor Engraver

Price: Free **url:** www.noteworthy.com

Find Igor Engraver 1.1 on The Disc.

It's not often that a software developer gives away such a full-featured program as Igor Engraver, but NoteHeads software has offered us Mac users a once-in-a-blue-moon deal. This music-scoring program runs for 30 days, at which time you have to register it at the NoteHeads Web site. All *that* process will cost you is a few TCP/IP packets and a bit of your time.

Igor Engraver is an intelligent score writer for putting your musical fantasies on paper. It features all the tools you'll need to create scores, from MIDI playback (if you happen to have a MIDI rig hooked up to your Mac) to a professional-level notation system, packaged in an easy-to-use interface. But the fun doesn't stop there. With Igor Engraver, you can create cross-platform scores and publish them on the Internet. That way, anyone who downloads NoteHeads Reader (another free program) can read, play, transpose, and buy your Internet-published music. Think of it as the shareware method of selling music.—*DR*



Although the original score belongs to Bach, you can make it your own with Igor Engraver, a free notation program from NoteHeads software.

Overheard in the Forums

System 7 Is the Death of Apple

We've heard our share of rants regarding why Mac OS X will be the death of the Macintosh, and a few of the MacAddict.com readers seem to agree. They've posted a number of wonderful rant parodies in our forums, and we couldn't resist publishing one.—*DR*

Forums Member: Kirkgray

I don't understand why Apple insists on forcing us to use System 7. (It's not forcing us? Oh, yeah—new machines like the LC II and IIsi won't even run System 6!) Everything System 7 stands for sucks!

1. The full-time multifinder is just another way to get us to buy more memory. The Mac works best running one app at a time. For anything you really need to do inside an app, you've got desk accessories (or at least you *used* to have them).

2. System 7 is huge—too huge. Again, this is just a way of getting us to buy more hardware—in this case, a hard drive. System 7 won't even run off floppies, as my good old System 6.0.8 will.

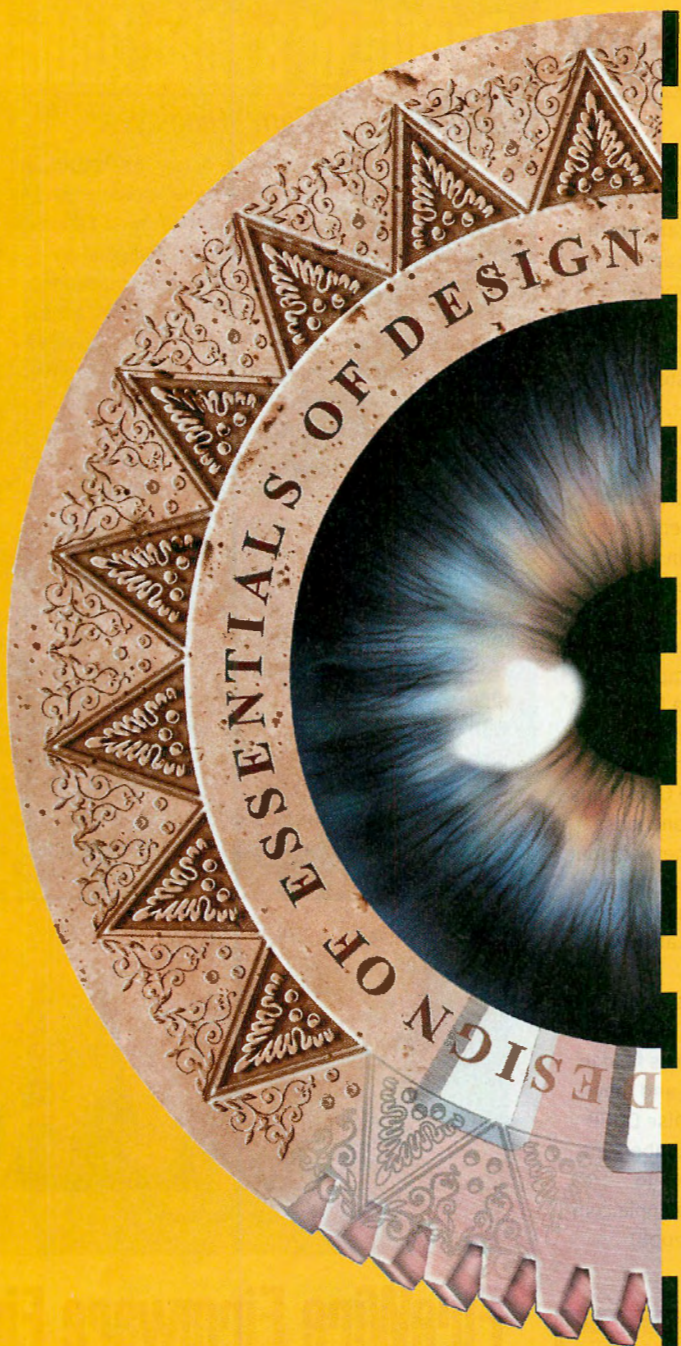
3. Color support and color icons are just ridiculous. Mac displays should be black and white—no colors, no shades of gray—so nothing distracts us from getting our work done.

4. Turning Desk Accessories into mini-apps sucks, too. It's an insult to the original designers of the Mac. These guys were geniuses to make the system see these marvelous little programs as drivers and trick it into running more than one at once—beautiful, elegant, original.

5. Providing HyperCard with the System is stupid. The Mac broke ground as the first computer that ever shipped without a programming language. Supplying one now (even a graphic, object-oriented one) is just giving in to the dark side.

I could go on and on... but the fact is I'm too damn angry. The situation sucks. I'm going to get me a 386 and Windows 3.1. Then I'll live in a perfect world.

Illustration never looked so good.

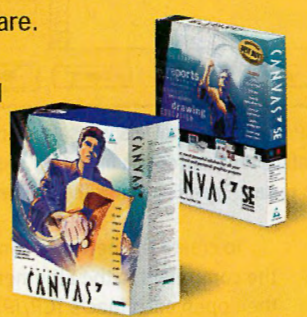


Eye-catching illustration, isn't it? And yes, despite the glistening highlights, the realistic textures, the subtle shading, and the soft air-brushed effects, this is a completely vector illustration. And it's only possible with Canvas 7.

Match pinpoint precision with painterly strokes through Canvas 7's exclusive Sprite technology. Blur vector lines, paint transparency effects, apply image filter plug-ins to vectors, text and images. It's hard to believe that you can draw like this – never mind in one, attractively priced program. When you're done, prepare your creative visions for print or web with an incredible array of over 40 file format filters.*

Feast your eyes on Canvas 7 today, and get a whole new outlook on illustration software.

Now available in Professional and Standard Editions.



Get Canvas 7 today!

Professional Edition	$375
Competitive Upgrade	$199.95
Standard Edition	$99.95

www.deneba.com/macaddict
800.7DENEBA

DENEBA

CANVAS™ 7

No comparison.

DENEBA

WINLIST Windows Magazine 1999 · Macworld · PCWEEK BEST OF COMDEX FINALIST · finalist macworld eddys · NET Internet.Works ESSENTIAL · 9/9 mac today editors' choice · Desktop Publishers · eMediaweekly · 4-STAR PCComputing March 1999 · Digit BEST BUY · MACADDICT FREAKIN' AWESOME! · MacUser · 5 MyMac Magazine

© 2000 Deneba Software. This ad was created using nothing but Deneba Canvas 7. Canvas, SpriteEffects and SpriteLayers are trademarks of Deneba Systems, Inc. For more information send email to sales@deneba.com.

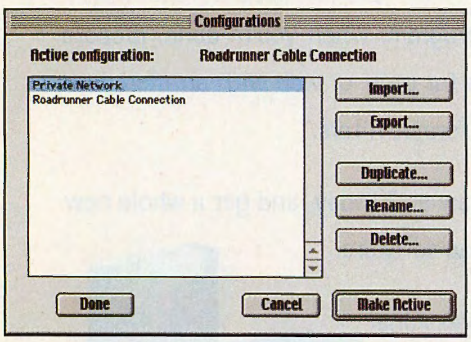
* 40 file formats available in Canvas 7 Professional Edition only.

Fake Your Own TCP/IP Network

The Quick Way to a Home LAN

If you've ever wanted to host a LAN gaming party, or set up a TCP/IP network that doesn't require an Internet connection, check this out.

We've covered this topic before (Dec/99, p48), but just in case you missed it, we'll provide a fresh set of instructions. The easiest way to frag your buddies is to build a private IP network, in which you connect all of the computers (they needn't be Macs) to a single Ethernet hub. IP stands for Internet protocol, the language computers speak on the Net.



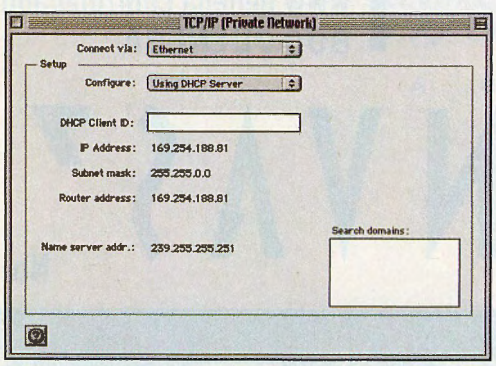
The TCP/IP control panel lets you save more than one configuration and switch on the fly. You don't have to restart. Try doing *that* with Windows.

To create the network, connect the computers to the Ethernet hub, then open each Mac's TCP/IP control panel. (PC users will have to fiddle around with the networking control panels.) Since you may already have configured your computer for another connection, such as a dial-up or AOL account, you should probably create a new configuration and save the old one for future use. Select Configurations from the File menu and duplicate your current configuration. Rename the copy as you like, then click the Make Active button to enable your new configuration.

Back in the TCP/IP main window, choose Via Ethernet from the Connect pull-down menu and Using DHCP Server from the Configure menu. Close the window and click Save. Now you can launch your game or any Internet application to receive an IP address from a phantom DHCP server. Internet applications won't actually connect to anything since your system's not hooked to the Internet, but your Mac will autoconfigure the TCP/IP settings.

Open your TCP/IP control panel again and view the numbers. Your computer will have filled in the IP address field, the number other users on your private network will use to connect with you. In the configuration we've described, your computer searches the network for a DHCP server so it can assign a valid IP address to that server. When your Mac doesn't find one, the OS assigns a dummy address—this functions perfectly on your private network, but would not work on the real Internet. Setting up all your computers like this allows them to communicate with each other.

You can also reserve sets of IP numbers for private use. Type these numbers into the IP address field in the TCP/IP control panel, and they will function just as the false DHCP numbers do. Private IP numbers are available on Apple's Tech Info Library site (http://til.info.apple.com/techinfo.nsf/artnum/n32008).
—Buz Zoller



Set up your TCP/IP control panel for a LAN party—use a phantom DHCP server to populate your configuration for a private network.

Profile of a Mac Addict

Jennifer "JenniCam" Ringley

When you enter the home of Jennifer Ringley, the study in contrasts strikes you immediately. The first things you see are the elegant hardwood floors, a blinking Ethernet hub with miles of cable, and an antique curio, which supports an almost innocuous tripod-mounted Web cam. "It's pretty much a geek paradise," she says with a little laugh. (For those who don't know, JenniCam is one of the first full-time Web cameras to chronicle the life of an individual.)

And the star of JenniCam is quite the Mac geek. Though we have to forgive her the TI Basic her parents bought when she was seven, Ringley leapt right in with an Apple IIc and has been a Mac fan ever since. Her current workhorse ("I do *everything* on my Mac," she told us) is an 8600/300—no G3 upgrade, either. When she's not slaving away on her own site (www.jennicam.org) or on a client's, Jennifer indulges in some recreational photo editing or chats with friends on IRC, unless she's out and about. Otherwise, she kicks back with the TV. "When I want to do something for pleasure, the computer is the last thing I want to be doing," she said.

For more on Jennifer, check out our interview with her in the Real Life Macs section of MacAddict.com.
—Rich Pizor

PHOTOGRAPH BY DAVID LAWLOR

She just wants to make cheese. No, *really*.

FireWire Firmware Fix

Apple Nudges PowerBooks up to Version 2.7

If you're having problems with your PowerBook's built-in FireWire, this one's a no-brainer. Go to asu.info.apple.com, search for FireWire, and grab the PowerBook Firmware Update 2.7. It fixes those annoying FireWire dropoffs that occasionally afflict PowerBooks, making them every bit as stable as any other FireWire-equipped Macs. Just run the installer, reboot, and keep holding down the Command and Power keys until you hear a long tone. Once your Mac reboots, you'll be in FireWire heaven.—*IS*

Machines That Do Everything.

Affordable Multi-Function Center® Models—one less thing you'll have to wait for, thanks to our Mac compatible MFCs. Fact is, we've developed some very smart all-in-one solutions. That's right, all-in-one, as in printing, copying, scanning and even faxing—all in one compact unit. Plus, your MFC is available in zippy 12 page per minute laser, color inkjet, flatbed and sheet-fed models. When it comes to multi-function, think better... think Brother.

For Machines That Mean Everything.

Various models available at: MACWAREHOUSE, CDW, MACZONE, J&R COMPUTER WORLD, OFFICE DEPOT, OFFICEMAX, FRY'S, MACCONNECTION AND STAPLES

At your side.™

brother®

© 2000 Brother International Corporation, Bridgewater, NJ • Brother International Corporation, Nagoya, Japan
For more information please call the Brother Fax-Back System at 800-521-2846 or visit our web site at www.brother.com

All brand and product names are registered trademarks of their respective companies.

scrapbook

You ask, and we tear up a Mac-related item for your enjoyment.

Mac OS X Hackers' Tools

by David Reynolds

Apple recently made the Mac OS X developer tools available for download from its site (http://developer.apple.com), and they're well worth the modem wear and tear—especially considering how many of them can alter OS X in useful and interesting ways. Here's a look at some of the apps included with the tool set.

icns Browser

Icon aficionados will appreciate this little program, which understands and displays Mac OS X icns icons.

GrabBag

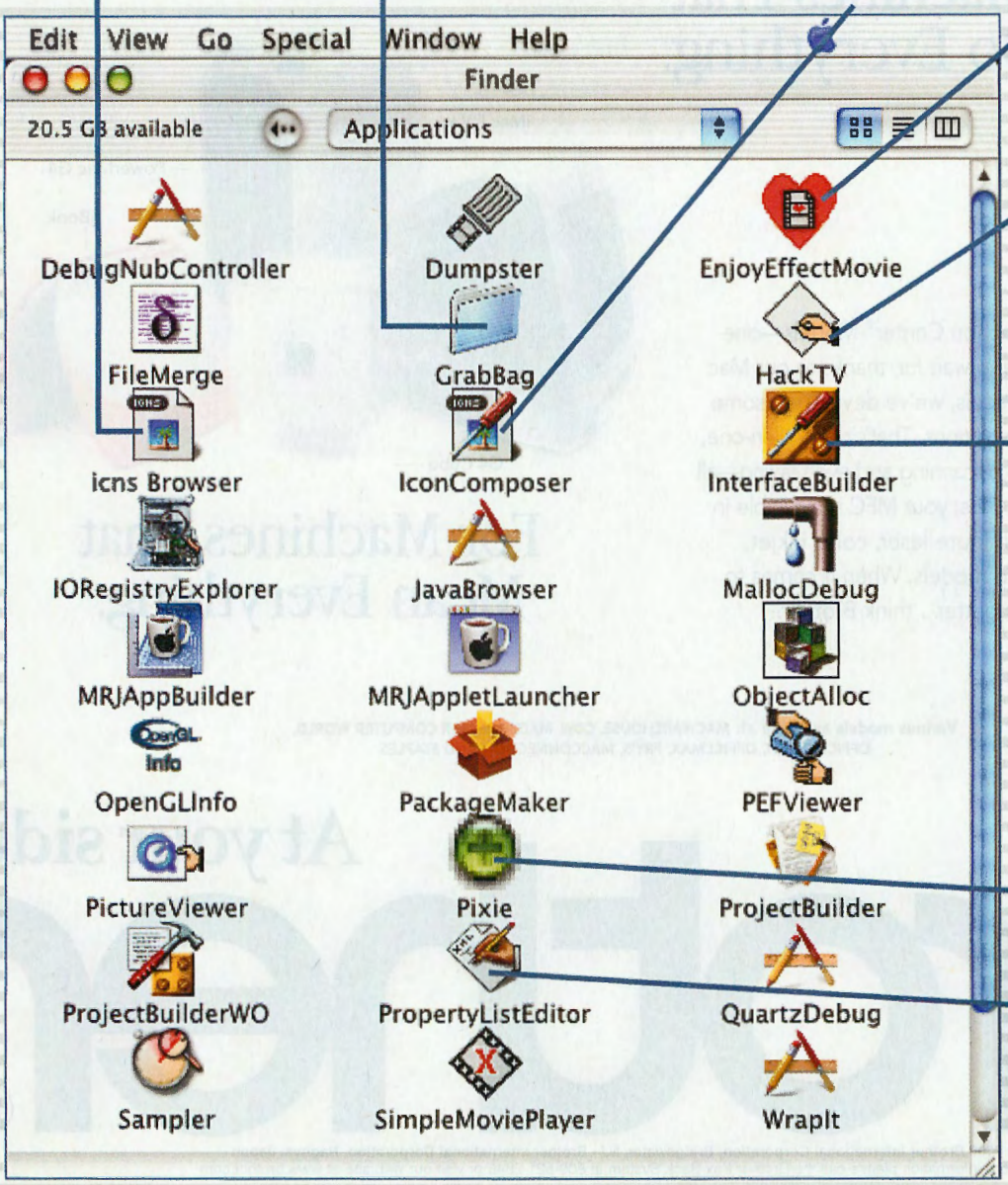
This folder contains two items—Profile First Aid and WorldText. Only the latter is really of interest to mere mortals. WorldText, a full-featured word processor, lets you do strange and amazing things with typefaces via its Typography panel. This program exposes just about everything you'd want to do with a font.

IconComposer

The more able-bodied twin to icns Browser, IconComposer lets you make custom icons by importing graphics you've created in another program.

EnjoyEffectMovie

This tool lets you create and edit QuickTime effects movies. The Fire effect is particularly fun. Heh heh heh fire heh.



HackTV

Brought to a shambling mockery of life by nobody—or so the About dialog box says—HackTV lets you record and manipulate video and audio streams coming into Mac OS X.

InterfaceBuilder

This is the Mac OS X equivalent of ResEdit. With it, you can build the user interface for Carbon and Cocoa applications. You can also use it to open the NIB file of an application, which stores resources, to do your own resource editing. Of course, you'll need the Terminal application to alter the file so InterfaceBuilder can see that NIB file.

Pixie

Reminiscent of the Close View function in earlier versions of Mac OS, Pixie magnifies the pixels underneath the cursor in a small floating window—so you can see just what's going on where you're pointing.

PropertyListEditor

Lets you open and edit XML-based preferences files—a great tool for hackers who want to play with their preferences.

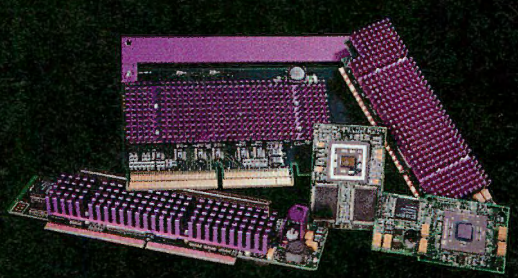
SONNET™

SIMPLY FAST™

Don't let another opportunity fly by. Add a Sonnet processor card to your Power Macintosh or PowerBook and instantly work faster. Depend on Sonnet for simply fast upgrade products. To learn more, call 1-800-786-6260 or visit our website at:

www.sonnettech.com/ma

Visit us at
MacWorld San Francisco
January 9-12, Booth #535



Look

A visual salute to the boldest, sleekest,

How could a story that starts with two twentysomethings working out of a garage, tampering in a medium as inherently messy and ugly as transistors, conductors, and microchips, result in a design revolution? If you had told a young Steve Jobs that his vision for a *computer* would eventually capture the imagination of the world's most prominent and influential industrial designers, he might not even have believed you. Certainly no one else would have.

Nevertheless, that's how it happened. Today the company that the two Steves founded transforms components as aesthetically unappealing as circuits, keyboards, monitors, peripherals, and cables into products people describe as extraordinary, sexy, luscious, and beautiful. But this design revolution didn't commence with the iMac. In fact, it's been a quest of 20-plus years that started with the first plastic case ever wrapped around a computer. Apple then created the first portable, all-in-one home Mac, and now has gone on to make breakthroughs in color and form—both inside and outside the box. The result? The breathtaking curves, elegant shapes, bold color, and awesome detail of today's Macintosh designs.

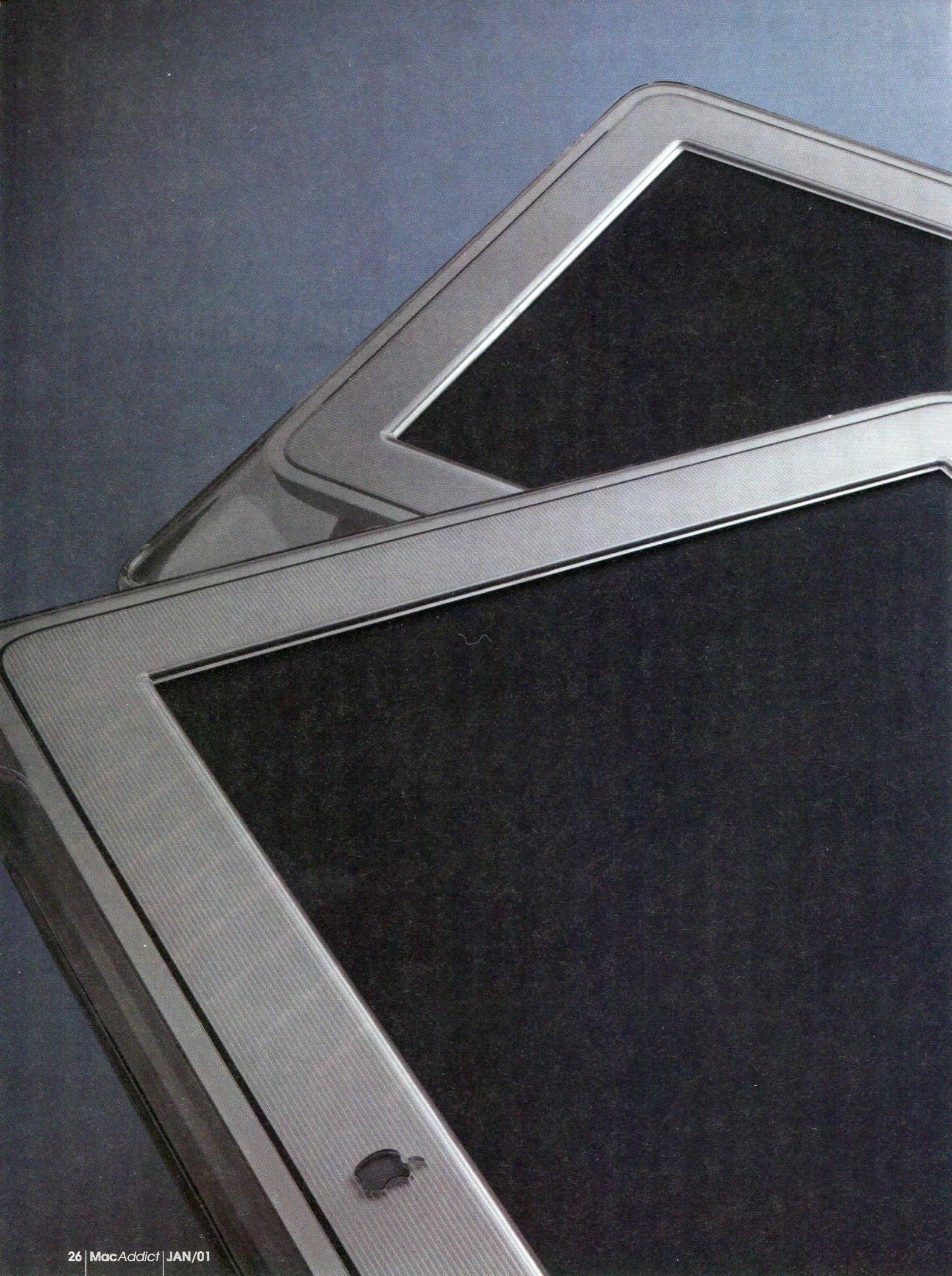
Apple rescued the personal computer from the role of electronics geek toy, forced it to become more than a command-line computational tool, and has led almost every major internal and external innovation in the business. Now the same company has transformed the computer into more than a mere box to store underneath your desk. The industrial design team's brilliant innovations have given new life to Apple, the Mac, and the entire PC industry.

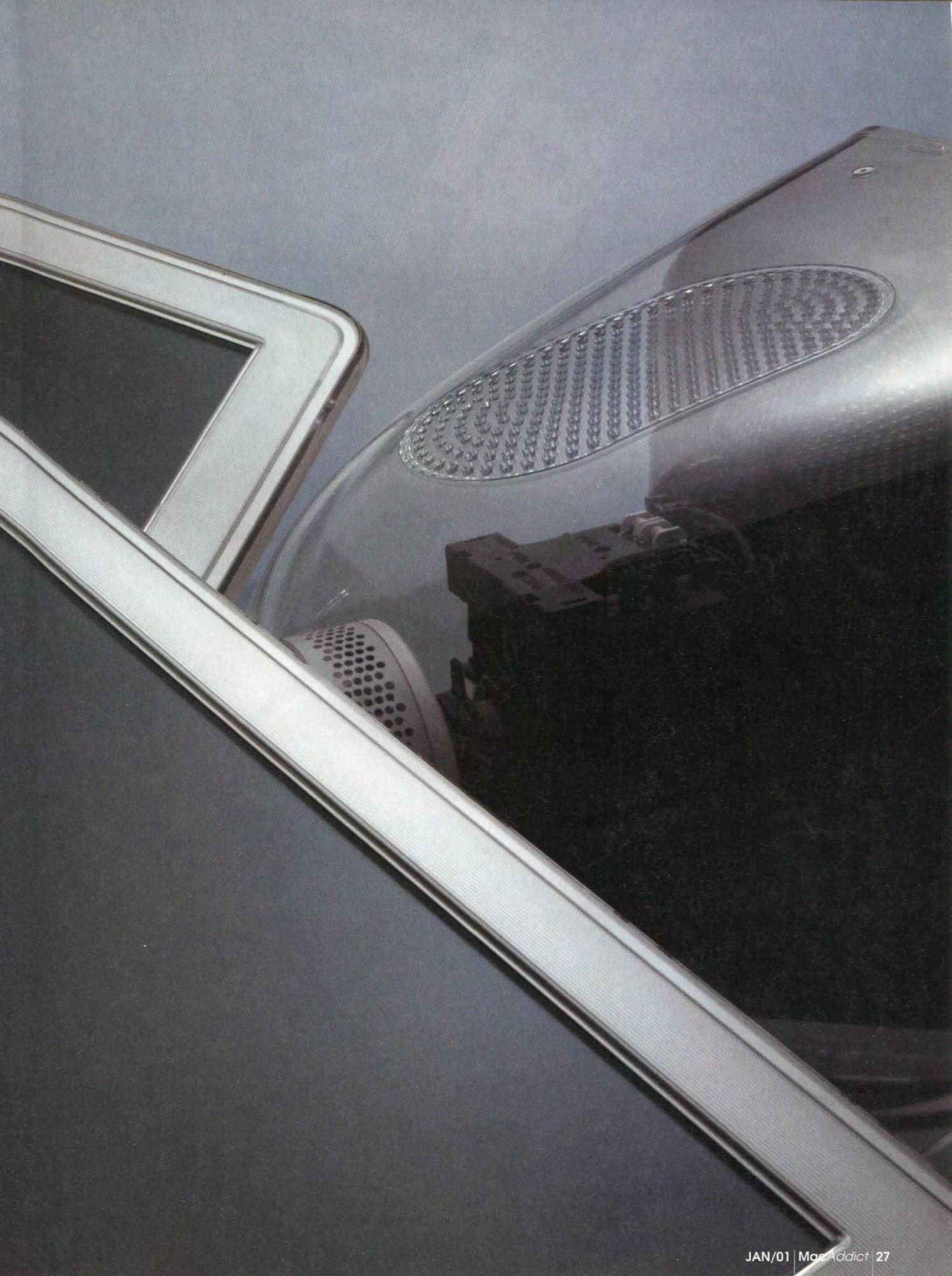
To celebrate this achievement, we've assembled a series of unique portraits commemorating these renaissance Macs. Each image showcases Apple's endearing commitment to making products people don't just use, but love.—*RC*

&Feel

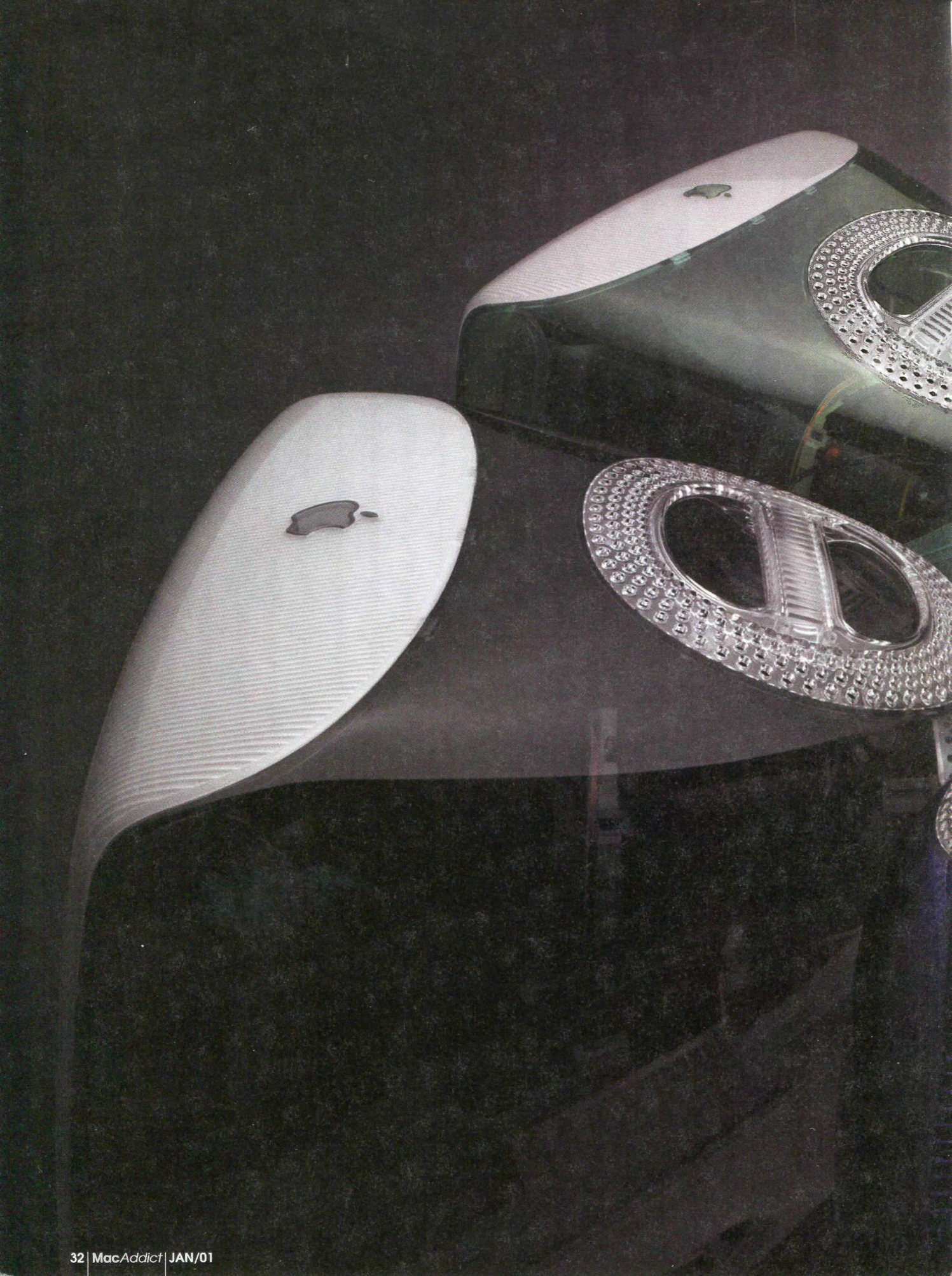
most stunning computers ever made

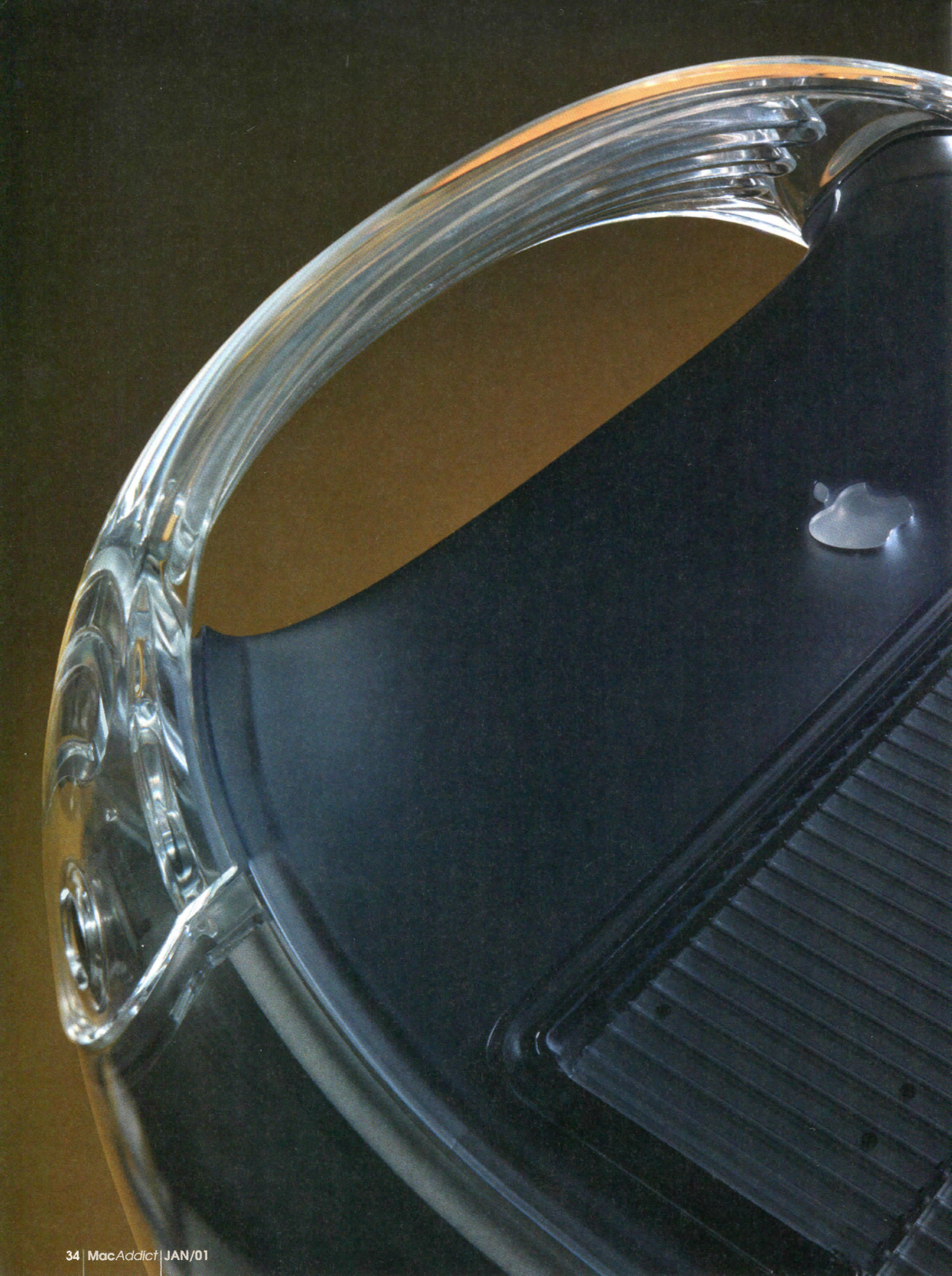
photography by Stan Musilek





F1
F2
F3
F4
F8
@
2
#
3
$
4
%
5
R





The Great Migration

PHOTOGRAPHY BY NASTY (HE'S GEAR!)

Hook up your old SCSI, serial, and ADB peripherals to your brand-new Mac

by Alan Stafford illustration by Carlos Aponte

Compared to their forerunners of years past, new Macs come relatively cheap. The same goes for peripherals: Scanners and laser printers used to cost thousands of dollars, and even inkjets would cost as much as a washing machine; now, you can get a printer for less than the cost of a big run to the dry cleaner. But just because shiny new devices come cheap doesn't mean you want to throw out perfectly good peripherals.

Unfortunately, when you finally break down and trade another paycheck (or two or three) for one of the shiny new Macs out of Cupertino, your peripherals may not be able to make the trip. In the past couple of years, Apple has dumped ADB, serial, and SCSI ports like last year's shoes in favor of faster, more modern interfaces such as USB and FireWire. To make many of your old devices work with a new Mac, you must buy an appropriate adapter—otherwise you'll have to shell out more shekels for new peripherals.

In this article we tell you which adapters will work with your old peripherals, how much they'll cost you, and when to throw in the towel and just buy new devices. Know, however, we're talking only about single-solution adapters—that is, ones that address your SCSI, serial, or ADB needs. Combination cards that can take care of multiple needs are available, but we didn't want to devote another 20 pages to adapters (we think you'll thank us for that).

Hardware isn't the only hurdle for your faithful old peripherals. Moving to Mac OS X may prove challenging as well. Unfortunately, we're not psychic, so we can't predict how OS X will shake things up. We did, however, get several prominent vendors, along with some adapter companies, to talk a little bit about their OS X compatibility plans. Hopefully, their commitments and the information you find here will help you wring a little more life from those beloved old peripherals you just don't want to part with.

To Be ADB

Works On: keyboards, mice, trackballs, drawing tablets, joysticks, hardware dongles, AppleVision monitors

The reviled puck mouse is gone, but its departure didn't eliminate other input-related quandaries. Some people still prefer the silky-smooth keys of Apple's ADB-enabled Extended Keyboard II. And what about your favorite trackball, drawing tablet, joystick, or QuickCam? Not to mention bar code readers, hardware dongles, displays, and display calibrators—who's going to hook you up?

The Solution: A USB-to-ADB converter from Belkin (www.belkin.com) or Griffin Technology (www.griffintechnology.com) is your ticket to the promised land. For instance, Griffin's iMate ($40 ESP) allows you to daisy-chain up to five ADB devices.

ADB connectors like ones from Griffin (top) and Belkin (bottom) allow you to move your favorite old keyboard, joystick, or other device to your new Mac.

Things to Watch Out For:

1. Some older QuickCams require both ADB and serial ports. Even if you were to buy an adapter for each, the driver software for those models is incompatible with Mac OS 9.

2. New Macs don't have ADB controllers on their motherboards. That means that your ADB keyboard can't start up a Mac, even if you have it hooked up via an adapter.

3. Bratty ADB devices. Most devices don't care if their path to your computer isn't pure ADB (if you decide to daisy-chain them), but a few get fussy, so check the companies' sites for compatibility info.

The Mac OS X Angle: Griffin says it will have OS X drivers done by the OS X ship date; Belkin says its OS X drivers will be ready by early 2001.

The Bottom Line: You can get a new keyboard or mouse (without the hairballs) for the same amount of money an adapter would cost. But for those great old keyboards and your high-end dongle-protected apparatus—or if you own several devices—an inexpensive adapter protects your investment.

Dos and Don'ts

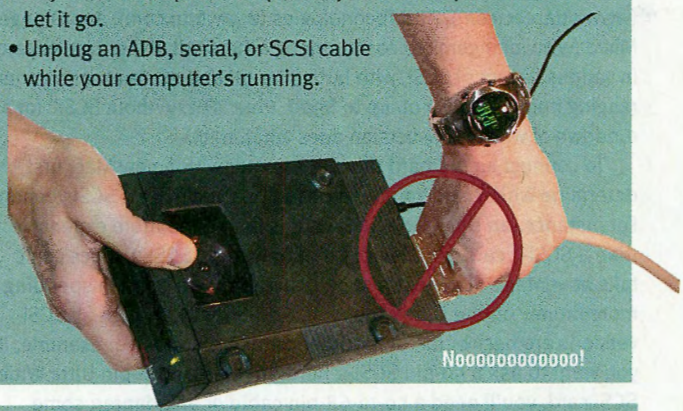
Just don't say we didn't warn you...

DO

- Unplug any USB or FireWire cable any old time you like.
- Purchase a SCSI card that accommodates the highest speed of all your devices' SCSI versions. (See "Fuzzy About SCSI" for information on SCSI speed, p39.)
- Read the compatibility list on a company's Web site and check the operating system version required for an adapter. Many require a fresh OS (especially true of FireWire adapters).
- Choose an adapter fast enough for the device you'll attach to it (especially if you must use an adapter instead of a SCSI card). For instance, CD-RW drives and USB don't mix because of the speed differential.

DON'T

- Expect to run multidrive RAID arrays with USB-to-SCSI adapters. Let's see, 40 MBps pumped through a 1.5 MBps pipe—who can do the math?
- Operate multiple SCSI devices at one time with a USB adapter—it doesn't have the requisite bandwidth.
- Buy an $80 adapter for a printer you could replace for $80. Let it go.
- Unplug an ADB, serial, or SCSI cable while your computer's running.



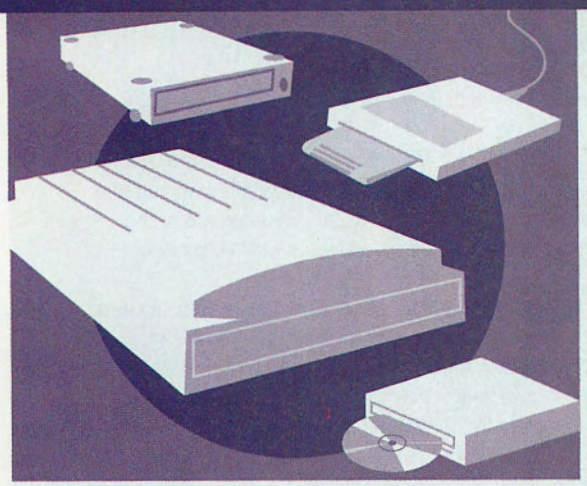
Time to Unload

Sometimes it's just time to let go—yes, even of the printer that helped you send proud pictures of Skippy the new puppy to your parents years ago. But don't head for the trash dumpster just yet. There are some alternative solutions that you should consider.

1. Journey to the Utah landfill where Apple buried all its remaining Lisa computers. Dig 'em up, connect your old peripherals, and bury them again.
2. FedEx them to Steve Jobs. He did this to you!
3. Burn them in your fireplace. Ah, smell the toxic plastic smoke—more evocative than wieners on the barbecue, and better for you.
4. Have a yard sale; sell them to unsuspecting bargain-hunters. Note to self: Stop frequenting yard sales.
5. One word: eBay. Make that two words: eBay, *sucker.*

SCSI Unchained

Works for: scanners; CD-ROM, CD-RW, DVD-ROM, DVD-RAM, tape, magneto-optical, and hard drives; removable storage devices (Jaz, Zip, Orb)



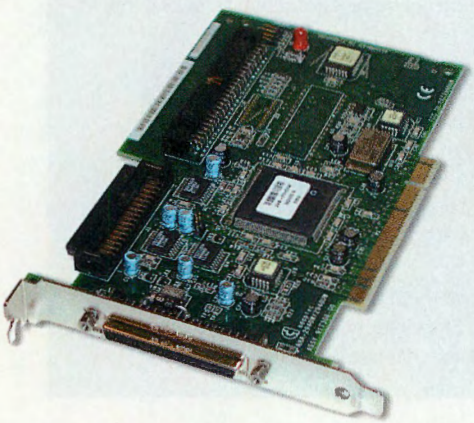
Getting a SCSI device to work with a SCSI-challenged Mac is the most common migration issue upgrade holdouts face. The iMac was the first model to snub SCSI, and by early 2000 Apple had completely rid its line of the once-standard interface.

Solution 1—G3 or G4 Tower Owner

Buy a PCI expansion card from a company such as Adaptec (www.adaptec.com), Atto Technologies (www.atto.com), and Orange Micro (www.orangemicro.com), among others. All of them make cards in various flavors of SCSI, with both internal and external connectors, ranging from $65 or so on up to $500. (See "Fuzzy About SCSI" for a rundown of which SCSI version does what, p39.)

To connect an old hard drive or scanner with a new Mac, first determine which card you need based on the device's SCSI version. For instance, an UltraWide SCSI card is faster and more expensive than a SCSI-2 card, but devices that only meet SCSI-2 specs can't take advantage of the extra speed, so there's no point in spending more money on the UltraWide card. Additionally, though all SCSI versions are backward-compatible, connectors vary. For example, if you want to use a 50-pin SCSI-2 hard drive with a 68-pin Ultra Wide SCSI card, you'll need a 50-to-68-pin cable or an adapter; some cards come with adapters, or you can purchase them as an option.

In some cases, however, springing for a card in a faster flavor makes sense if you're trying to accommodate multiple devices in different SCSI versions or you're planning to add more devices in faster SCSI versions—just buy a card that matches your fastest device and watch that chain crank!



A SCSI card like this Adaptec 2940UW is all you need to unite your PowerMac and your old SCSI peripheral in perfect harmony.

Solution 2—PowerBook, Cube, or iMac Owners Who Have One SCSI Device

Those poor, slotless Macs simply have nowhere to fit a PCI card. Instead, go with a single FireWire-to-SCSI or USB-to-SCSI adapter—for instance, Orange Micro's Orange Converter FireWire-to-SCSI adapter ($99 ESP), which offers 10-MBps SCSI-2 speed. However, forget about SCSI chains and terminators—the Orange Converter supports only one device at a time.

Fire up your peripherals by connecting them to a FireWire-to-SCSI adapter.

Solution 3—PowerBook, Cube, or iMac Owners Who Have More Than One SCSI Device

A USB-to-SCSI adapter is your ticket here. Such products include Belkin's USB SCSI Adapter with Termpower ($99.99 SRP), Adaptec's USBXchange ($79 ESP), and Xircom's Portgear USB to SCSI Converter ($69.99 SRP, www.xircom.com). Some of these adapters can support up to seven devices in a SCSI chain, though Adaptec recommends two at maximum because the USB interface is so much slower than even the slowest SCSI version: 1.5 MBps burst and 700 KBps sustained throughput. That sustained speed is equivalent to just over 4X in CD-ROM terms—insufficient to allow such devices as the latest SCSI CD-RW drives to work at their fastest speed; try it and you'll be burning coasters. But you should be able to make the setup work if you tell your CD-burning software to ratchet the write speed down to 4X (although with some drives you may have to go to 2X).

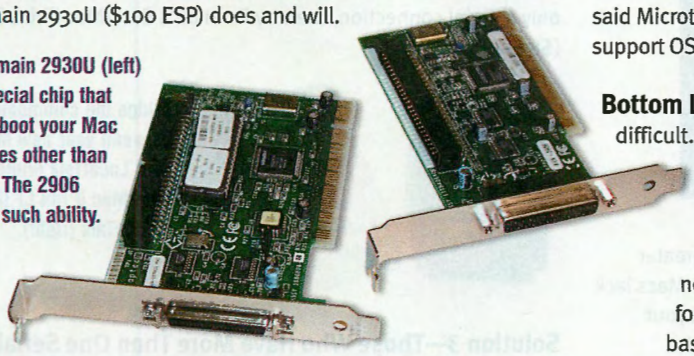
Ideal for daisy-chaining several SCSI devices, the USBXchange (top) and the Belkin USB SCSI adapter (bottom) hooks them up to a USB Mac.

Things to Watch Out For:

1. Some SCSI devices won't work with certain cards (or even some computers or versions of the Mac OS). For example, Hewlett-Packard (www.hp.com) says several of its old scanners—even the ScanJet 6100, which came out in early 1998—won't work with some Adaptec SCSI cards. Adaptec says HP designed its old drivers with the built-in SCSI of older Macs in mind, and notes that switching to third-party scanning software such as SilverFast (price ranges from $99 to more than $1,000; www.silverfast.com) or Second Glance's Scantastic ($79 ESP, www.secondglance.com) will skirt the issue (though you may be

putting that money to better use if you buy a new scanner). Microtek (www.microtek.com) cautions that a couple of its really old scanners, such as its ScanMaker 600GS and 600ZS, are incompatible with both Mac OS 7.6 or later and Adobe Photoshop 4.0 or higher. Our advice: Weigh the cost of a card or adapter against the resolution you can get with a new scanner. If your old scanner maxes out at 300 dpi, it's probably time to ditch it.

2. Some low-priced SCSI cards won't allow you to boot your Mac from disk drives connected to them. That's because in order to support booting, the card must have a special chip. For example, Adaptec's SCSI Card 2906 ($60 ESP) doesn't have such a chip and thus won't allow you to boot to a hard drive hooked up via that card, but its PowerDomain 2930U ($100 ESP) does and will.



The PowerDomain 2930U (left) contains a special chip that allows you to boot your Mac from disk drives other than the main one. The 2906 (right) has no such ability.

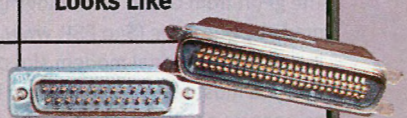
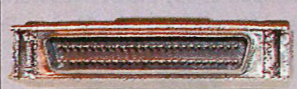
3. Speed slowdown with USB adapters might drive you nuts. Low-resolution scanning (resulting in small file sizes) should work fine with a USB-based adapter, but if you routinely scan high-resolution, large-dimension documents, you should look elsewhere, because the speed (or lack thereof) will bum you out severely.

The OS X Story: Epson (www.epson.com), HP, and Microtek all insist they'll support OS X, but none of the companies has yet compiled a complete list of scanners it plans to support. According to an Epson spokesperson, the company recently finished a major upgrade of its core TWAIN driver, and the revised code will make it easier to update for OS X. Michael Papet, Microtek product specialist, said Microtek will start by supporting a few models, but eventually will support OS X "pretty far back."

Bottom Line: Deciding what kind of SCSI card to buy shouldn't be difficult. The devices you have pretty much make the decision for you. Older SCSI hard drives, for example, just require inexpensive SCSI cards to work, while the drives that offer greater capacity and speed usually demand faster, pricier cards. If your Mac doesn't have PCI slots, then you need to go to Plan B. Choose a FireWire adapter over USB for your SCSI devices to preserve speed (unless you've got a base iMac with only USB).

Fuzzy About SCSI

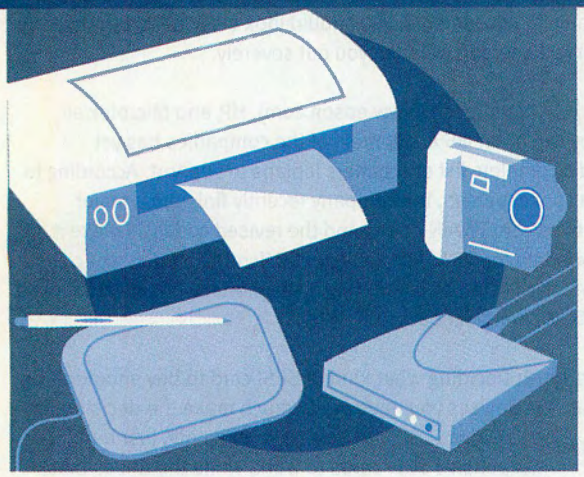
Macs have included SCSI since the Mac Plus, even though the machine didn't even come with an internal hard drive; maximum data throughput hustled at 1.25 MBps. The Mac SE, introduced the following year, came with a monster 40MB SCSI hard drive. And 15 years after the Plus, Apple kissed SCSI goodbye with the FireWire PowerBook. Yet through the years, people stockpiled SCSI devices—hard drives; scanners; CD-ROM, Jaz, and Zip drives; even printers. This chart displays the various versions of SCSI, which now reaches 160 MBps and should hit 320 MBps next year.

Protocol	Maximum Throughput (MB per second)	Used In	Optimum External Connector Type	What the Connector Looks Like
SCSI-1*	5	Scanners, Zip drives, and hard drives	DB 25, LD 50 (Centronics 50)	
SCSI-2 (aka Fast SCSI)**	10	Hard drives; Jaz and Zip drives; scanners; CD-ROM, CD-R, and CD-RW drives	HD 50	
Fast & Wide SCSI	20	Hard drives and RAIDs	HD 68	
Ultra SCSI	20	Hard drives, CD-RW drives, and Jaz drives	HD 50	
Ultra Wide SCSI	40	The hottest, fastest, most high-end hard drives	HD 68	
Ultra2 SCSI	40		HD 68	
Ultra2 Wide SCSI	80		HD 68	
Ultra160 SCSI (aka Wide Ultra3 SCSI)	160		VHD 68, HD 68	
Ultra320 SCSI (not yet available)	320	The new Ferrari?	TBD	?

*Macs from the Mac Plus until the first PCI-based PowerMacs featured SCSI-1 **Macs from the first PCI PowerMacs until today's FireWire-equipped Macs featured SCSI-2

Serial Boxes

Works On: printers, digital cameras, MIDI devices, drawing tablets, PDAs, modems



Connecting a geriatric printer to a new Mac presents a greater challenge than hooking up SCSI devices. Because new Macs lack serial ports, you must use an adapter that can connect your serial devices. Choosing the right adapter is the hard part—the problem stems from LocalTalk, Apple's old networking protocol, which allowed multiple Macs to share files and print to networked printers. Over a serial connection, one Mac can communicate with only one device; but LocalTalk is a different beast, enabled by a chip that sits on the motherboard of older Macs. This means to add LocalTalk to new Macs—and to give them networking capabilities—you need an adapter that has the chip, which dramatically steps up the cost. In practical terms, this means some adapters (the cheaper ones that lack the chip) won't work with some printers.

Solution 1—G3 and G4 Owners

The gPort from Griffin Technology ($49 ESP) and the Stealth Serial Port made by GeeThree ($50 ESP, www.geethree.com) are small cards you install in the internal modem slot on your G3 or G4 (the downside is that you must remove the modem if you have one there). Both companies say the devices work with either serial or LocalTalk printers (see "How to Set Up a Modem Port Adapter," p41).

The Stealth (left) and gPort (right) are the new ports on the block.

Solution 2—iMac, Cube, and PowerBook Owners, or Those with G3s or G4s Who Depend on the Built-in Modem and Need to Hook Up a Printer

Farallon's EtherMac iPrint LT ($109 ESP, www.farallon.com) lets you connect a LocalTalk printer to a Mac's Ethernet port (and network the printer with other Ethernet-enabled Macs). Asanté makes the AsanteTalk Ethernet-to-LocalTalk bridge ($125 ESP, www.asante.com), a similar product that supports all LocalTalk printers. If you require only a serial connection, then try Farallon's EtherMac iPrint SL ($83 SRP).

Bridge the communication gap between your new Mac and your LocalTalk printer with the EtherMac iPrint LT (left) and AsanteTalk (right).

Solution 3—Those Who Have More Than One Serial Device but Don't Require LocalTalk Capability

Keyspan's USA-28X USB Twin Serial Adapter ($79 SRP, www.keyspan.com) handles serial devices (including printers), but doesn't support LocalTalk. It does provide two serial ports, however, so you can connect a serial printer and another device such as a QuickCam. In our tests, the USA-28X worked well with a StyleWriter 2400, even allowing printer sharing over the network. Several other vendors, including Belkin, CompuCable (www.compucable.com), and Xircom, also offer USB-to-serial adapters, though they all forego LocalTalk.

Double your pleasure, double your serial devices with Keyspan's USA-28X USB Twin Serial Adapter.

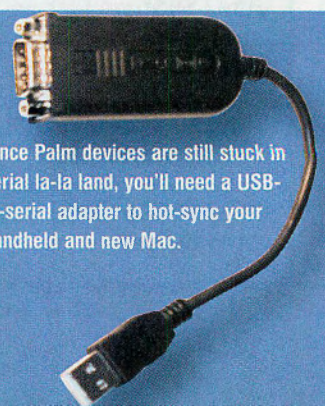
Solution 4—Those Who Own an Apple or Old Epson Printer and Have a Serial Mac Lying Around

If your impasse involves an Apple printer, consider this option—with Apple's Printer Share extension, which came with your System disc, you can keep the printer hooked to your old Mac, network it via Ethernet to your new one, and print over the network connection. You must keep both Macs on, and they must have the same version of the printer's driver installed. We tried it with a StyleWriter 2400 and it worked fine.

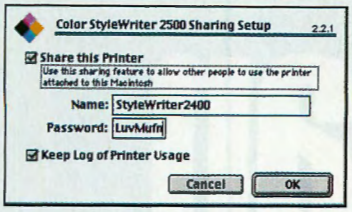
The Deal with Handhelds

Such gadgets as Palm (www.palm.com) devices and digital cameras depend on the Mac serial port to transfer data to and from your computer. Likewise, all but the most recent MIDI devices use serial. Are your pixels, tunes, and data stranded?

Not necessarily. Palm sells the PalmConnect USB Kit, a $40 USB-to-serial adapter; Keyspan's USB PDA Adapter ($39 SRP) provides a single serial port (it operates at a slower speed—57.6 Kbps as opposed to 230 Kbps—than the serial adapter, though that should be plenty fast enough for a pokey PDA). Any of the serial adapters mentioned in this article should allow you to connect not only a Palm but also any old serial product.



Since Palm devices are still stuck in serial la-la land, you'll need a USB-to-serial adapter to hot-sync your handheld and new Mac.



Don't put that old Mac out to pasture: Use it to network a StyleWriter printer with your new Mac.

For old Epson printers that don't use USB, try NiceBoy Software's EpsonShare ($24, www.ses.fr/niceboy). With EpsonShare you can set up your old Mac (to which you must attach the printer) as a print server. Install the identical version of the Epson printer driver on all networked Macs, then start up EpsonShare on client Macs. As long as you can use File Sharing, you can share the Epson printer.

Share it, don't chuck it. The EpsonShare shareware app lets you network new Macs to old Epson printers via an old Mac.

Things to Watch Out For:

1. Adapters that don't spell out which products they support. Most companies maintain comprehensive lists on their Web sites, and some point out potentially compromised behavior.

2. LocalTalk printer adapters. The natural inclination is to choose the least expensive device, but you may end up with a serial-only adapter that doesn't support LocalTalk.

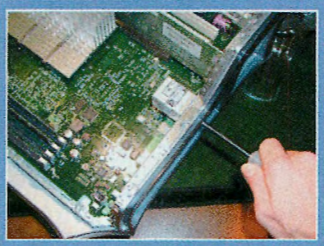
The OS X Story: Almost every adapter vendor says it'll write OS X drivers for its products by the time OS X ships. "We already have rudimentary functionality accomplished—that is, communicating with our USB serial adapter via the USB port on a Mac running Mac OS X," said Keyspan president Mike Ridenhour. Belkin reports it'll have updates for its products by early first quarter of 2001; Asanté says it'll support only its newer products; and Adaptec says the USBXchange will get a new driver, as will its SCSI cards.

Getting a driver for the adapter is only half the battle, though; you must have an updated device driver as well. Palm says this is no problem—it'll provide OS X software support. Digital cameras and MIDI devices will also require updated software, but as with printers and scanners, don't bet that devices older than 1998 (when the USB era began) will work with OS X. Epson and HP both say they'll offer OS X drivers for their newer printers, but older printers may get left behind. (Neither company could yet provide a comprehensive list). Apple refused to say whether it would support all of its own printers, but in the Mac OS X beta release, Apple did include a generic PostScript driver that supports basic functions but no printer-specific options. For an application to recognize that a printer has a duplex unit attached, for example, the printer manufacturer must supply additional software. And don't forget—that driver doesn't support non-PostScript printers, such as inkjets.

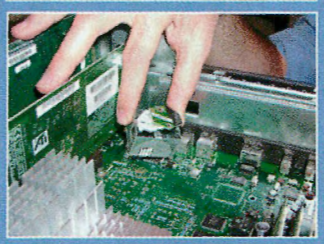
The Bottom Line: It's a bit loony to spend even $49 on an adapter to connect a tired old inkjet printer. But an adapter may be a good investment for more expensive serial devices, such as dye-sublimation or LocalTalk laser printers (especially ones with hardware PostScript), which are expensive to replace. Just make sure the adapter supports LocalTalk.

How to Set Up a Modem Port Adapter

Using the Stealth Serial Port from GeeThree, you can ditch your sluggish 56-Kbps internal modem and use the modem port for something truly useful: a serial connection. In this how-to, we show you how to install the Stealth on a G4 with AGP graphics. Note that there's a different product for blue-and-white G3s as well as G4s with PCI graphics. Check GeeThree's Web site for more details.

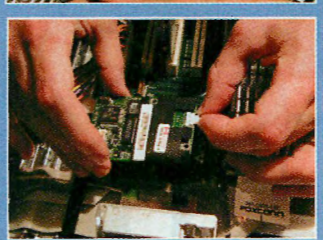


1 Unscrew the box that holds the modem port.

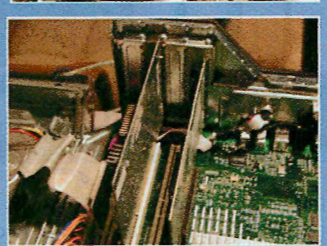


2 Remove the screws from the metal box that holds the modem port and take the port out of its casing.

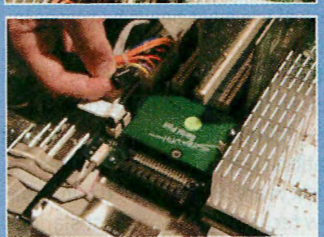
3 Tape your modem connector to the side of the computer to get it out of the way, then install your new serial port in the space formerly known as the modem port.



4 Take out the two screws that secure the actual modem, then remove the port by detaching it from the modem card.



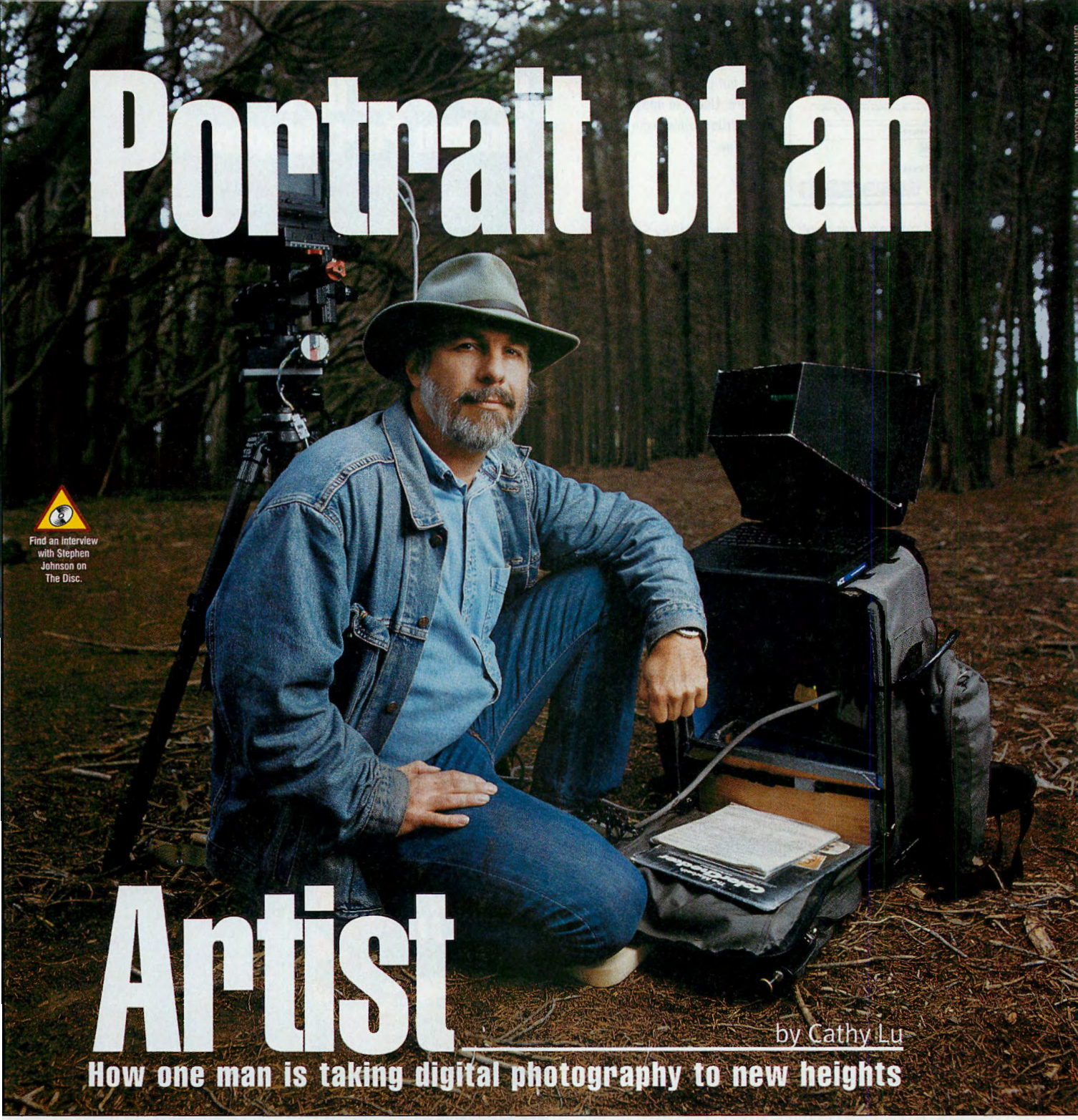
5 String the Stealth Serial Port cable underneath the video cards (center of photograph) and the hard drive cables.



6 Screw in the Stealth Serial Port card where the modem used to sit. Plug the cable from the serial port into the Stealth Port card. Once you install the Stealth Port software from the CD (or the Web site), go nuts plugging in all of your serial devices.

Alan Stafford will still be using an Apple Extended Keyboard II when everyone else has moved on to a thought-control interface, because he's positive he'll get better throughput with ADB.

Portrait of an Artist



Find an interview with Stephen Johnson on The Disc.

by Cathy Lu

How one man is taking digital photography to new heights

Some people might say Stephen Johnson lives a charmed life. That's because as a digital landscape photographer, he's had the opportunity to see some of the most beautiful places in the country. From Olympic National Park in Washington State to the Everglades in Florida, Johnson has traversed approximately 75,000 miles and entered 50 national parks, all in the effort to become the first photographer to document these landmarks digitally. The project, called "With a New Eye: A Digital National Parks Project," has been Johnson's labor of love for the past six years. He conceived it in 1994 as a way to test and showcase a new technology he had just started experimenting with—the scanning camera. "With a New Eye" endeavors to highlight the powers of the budding medium.

Yet this medium still lacks the recognition it deserves, even though Johnson, whose work has appeared in *Life* magazine and on *ABC News*, has produced some astounding images of nature. In all of this he relies on his PowerBook G3, working in harmony with his camera equipment to produce the realistic colors and incredible detail for which he's known. But that's not the only way the Mac has served him. Back in Apple's early days, Johnson laid out an entire photography book on California's Central Valley using PageMaker and Mac models including the Macintosh SE, II, IIfx, and Quadra.

In some ways, it seems unnatural: capturing nature with cutting-edge, high-tech equipment. But the way Johnson sees it, his method is the most accurate way to preserve nature's beauty on paper.

Q&A with Stephen Johnson

Back in August, *MacAddict* talked with Stephen Johnson in his Pacifica, California, studio about the finer points of digital photography. We were also curious as to how a traditional film landscape photographer ended up going the digital route. That story starts with a man named Michael Collette (www.betterlight.com), who was building a scanning insert for a view camera. In September 1993 he demonstrated a working prototype to Johnson, who had already seen what the technology was capable of.

Stephen Johnson: [When Mike called,] I said, "Mike, let's do a little test. Let's shoot some film and let's shoot your digital camera, side by side." It seemed amusing to go to every clichéd tourist spot we could think of in San Francisco, and that's what we did....What really amazed me was what I saw when I went home and opened up those files on a big 20-inch monitor. I saw detail in those photographs unlike anything I had ever seen in the history of photography. I saw an ability to record highlight and shadow detail way beyond film. We had been doing gray balances all day, so the color was just dead-on because we kept balancing the sensor to light. And the resolution was stunning. There was no grain....And in a sense—a very profound and real sense—film died for me that day.

***MacAddict:* Is there still a reason to shoot film?**
Stephen Johnson: I would say you have to ask yourself what is the reason for shooting digital—you have to want that kind of quality and be willing to make sacrifices to use it. The scanning camera requires at least a one-minute exposure for full resolution...and there's the sheer cost. The BetterLight 6000, which I'm using for most of my work at this point, is a $16,000 camera insert.

***MacAddict:* How has the maturing technology changed your photography over the years?**
Stephen Johnson: I remember when we used the first color PowerBook in 1994, the 540C. If I wanted to open one of the full-resolution files, I had to download it from the camera onto the hard drive of the PowerBook and turn around and open it in Photoshop. The whole process took almost 20 minutes....Now I open almost every file I shoot in the field. [The process now takes about 1 minute 20 seconds.]

***MacAddict:* In terms of image editing, how much do you do?**
Stephen Johnson: First of all, any photograph [I make]...comes in as a vertical whether it's shot horizontally or vertically. Since I shoot mostly horizontal, I've always got that rotation to do. I also have to run a slight unsharp mask, because CCD images by their very nature are somewhat soft. I'm very careful to take the sharpening back to what I would call the native sharpness of the lens—I don't try to recover from any softness in the original focus, I simply try to get the edges commiserate with what I was seeing on the ground glass through the lens to begin with.

***MacAddict:* But you won't retouch your work too much.**
Stephen Johnson: The last thing I'm going to do in this project on the national parks is start editing things out or putting things in. My ethic remains the same as it always was. If you make the photograph strong and well-seen, then you merely try to get the best print you possibly can—not by changing it, but by being true to it.

***MacAddict:* It seems like a lot of your work is about conservation.**
Stephen Johnson: Yes, and it always has been—from that first work at Mono Lake, when I discovered it was dying because of water diversion to Los Angeles....That's what the "At Mono Lake" exhibit [a group exhibit Johnson curated featuring more than 150 years of photography] was about—not to say, "Save Mono Lake," but to say, "Look at Mono Lake. Here's how all these photographers for over 100 years have been looking at it. Pretty remarkable place, isn't it? By the way, this is what's happening to it." You don't need to say anything that overt with art. What you need to do is show people what something is. If you can do that in an elegant and beautiful manner, and the place in and of itself has an inherent eloquence, it can speak for itself. In a sense, as landscape photographers, what we do is try to record the beauty we see.

Tips for Digital Dilettantes

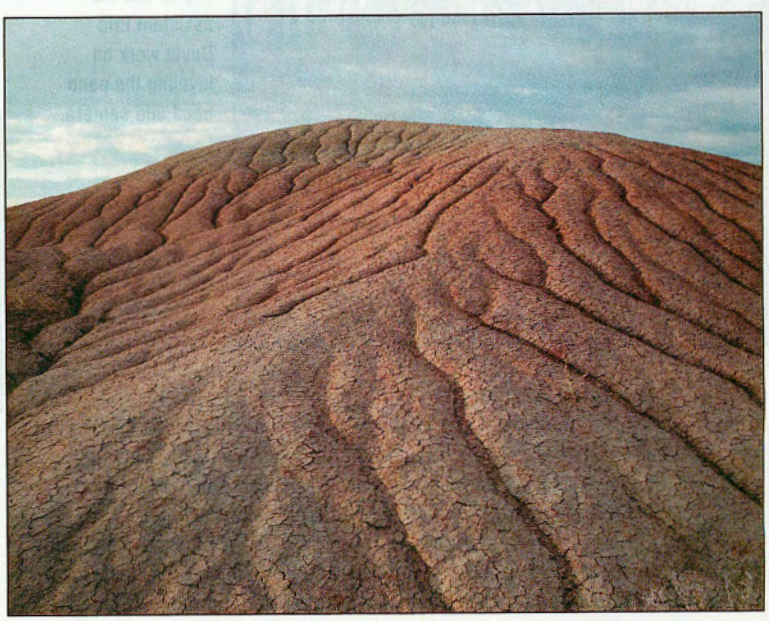
Here are professional photographer Stephen Johnson's tips for amateur photographers.

Tip 1: Do not use a high JPEG compression ratio—either turn off compression or use the highest image-quality setting you can.

Tip 2: Turn off your digital camera's built-in sharpening feature if it has one. According to Johnson, this feature oversharpens images and ends up building halos around contrasting areas. Sharpen the images yourself in Photoshop by inspection.

Tip 3: Save your images as TIFFs rather than JPEGs, if your camera offers this feature. You'll end up with larger files and use up disk space more quickly, but your images will be more detailed.

Tip 4: Think about what you want to do with your pictures. If you want to make 11 by 14 or 8 by 10 prints, even with a 3-megapixel camera, you're better off with film. According to Johnson's discerning eye, 5 by 7 is as large as you'll want to go with a digital print from a consumer camera, although, he says, many people are happy with larger digital camera prints.



In May 1997, Johnson took this photo of an eroded hill in Badlands National Park, South Dakota, as part of the Parks project.

PHOTOGRAPH BY STEPHEN JOHNSON. COPYRIGHT ©2000 BY STEPHEN JOHNSON. ALL RIGHTS RESERVED WORLDWIDE. WWW.SJPHOTO.COM

The Inner Workings of a Photo Shoot

Going on a photo shoot with Stephen Johnson feels a little like a weekend camping trip. His load, however, does not contain tents, poles, and 12-packs, but rather a tripod, digital scanning insert, PowerBook G3, 4 by 5 view camera, and GPS receiver (to record the exact location where shooting takes place). While Johnson has the process of packing, hauling, and unpacking his equipment down to a quick-and-dirty science, the job doesn't lack peril. Take the time he journeyed to the Grand Canyon. As his camera was busy scanning the scenery, his PowerBook tumbled over the edge of the canyon and hung on by a SCSI cable. (To the Mac's credit, when Johnson reeled the machine in, it was still scanning.) On this particular photo shoot—to the Fitzgerald Marine Reserve in Montara, California—we experienced nothing so heart-stopping. Here we show you the anatomy of taking a panoramic picture and what it's like when technology, the Mac, and nature converge.

1 The Setup

After picking a location, Johnson sets up his equipment. Here he's planning to make a panorama, so he sets up a panoramic tripod head—he uses a level to make the camera sit straight on the tripod. Johnson then drapes what photographers call a dark cloth over the camera and looks through the camera to make sure he has found an image he likes. If he has, he plays with the composition, works with the depth of field, and adjusts the aperture, all by eyeballing the scene through the viewfinder. This is trickier than you might think as the images appear upside down and backward.

Once he finishes setting up the picture, he inserts his BetterLight scanning device into the camera and hooks the camera to his PowerBook via a SCSI cable. Both the scanning camera and the Mac have 6GB hard drives, so he can save the image to either device. Johnson also carries two removable expansion-bay hard drives, one 8GB and one 12GB, to store those hefty high-res shots—some panoramas can amount to as much as a gigabyte each.

Stephen Johnson (right) and his assistant Eric Doyle work on leveling the pano head and camera.

2 The Prescan

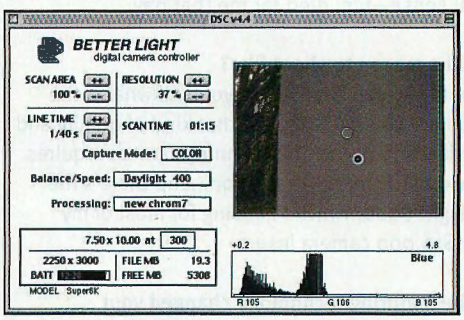
The next step is to take a 750-by-1,000-pixel, 2MB prescan of the image via BetterLight scanning software. This low-res scan allows Johnson to inspect the composition onscreen. It also creates a histogram that displays highlights, shadows, and distribution of brightness values, and indicates whether the exposure is off. Depending upon what he sees and how much time he has, he sometimes opens the file in Photoshop to look at a more detailed histogram and to zoom in and examine the focus. In this particular image, Johnson pays close attention to where the highlights fall and whether they are overexposed.

About the Artist's Work

Stephen Johnson prints all of his own artwork on rag paper using either an Epson 9500 pigment printer or an Iris. Visit him on the Web at www.sjphoto.com. The Parks project was made possible by: Adobe Systems, Apple Computer, BetterLight, DayStar Digital, Dicomed, Digital Pond, FWB, Iris Graphics, Newer Technology, Radius, Ricoh, and Sinar Bron Imaging.

3 Color Balance

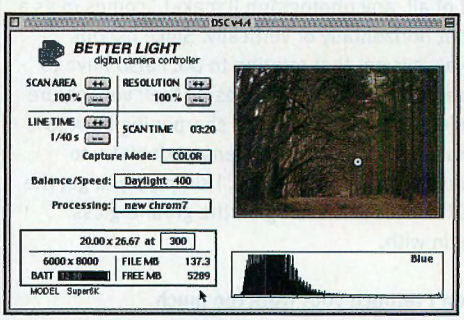
The next step is to color-balance the scanning camera to make sure the sensor adjusts for ambient light. To do this, Johnson holds up a gray card in front of the lens and does a prescan. He then picks a densitometer point in the scan that he wants to make neutral gray. Performing an autobalance tells the software to neutralize the gray balance point, and rescanning the gray card confirms that the software achieved that result. He then looks at the red, green, and blue values—equal numbers for R, G, and B mean the sensor is reading the card as dead-on gray. If the values vary, Johnson needs to tweak the color balance.



The grays have it. What Johnson is looking for here is almost equal R, G, and B values—here, they come close enough to satisfy him.

4 The Scan

Before doing a high-res scan, Johnson performs another prescan of the scene to make sure the color balance looks accurate. He's now ready to do a conventional rectangular (as opposed to panoramic) full-resolution scan, which will produce a 140MB file. On a typical, bright day, a scan at 100 percent resolution would take 66 seconds. Since this is a particularly overcast day, and the shoot is taking place in the woods, a full-res scan takes a whopping 3 minutes and 20 seconds.



Got time to kill? The scanning software indicates that a full-res scan in this light will take a full 3 minutes and 20 seconds.

5 Inspecting the Scan

When the scan finishes, Johnson scrutinizes the image for problems (preferably in Photoshop, if he has time). He notices that some of the foreground branches lying on the ground are unfocused, and that the depth of field is insufficient for this particular scene.

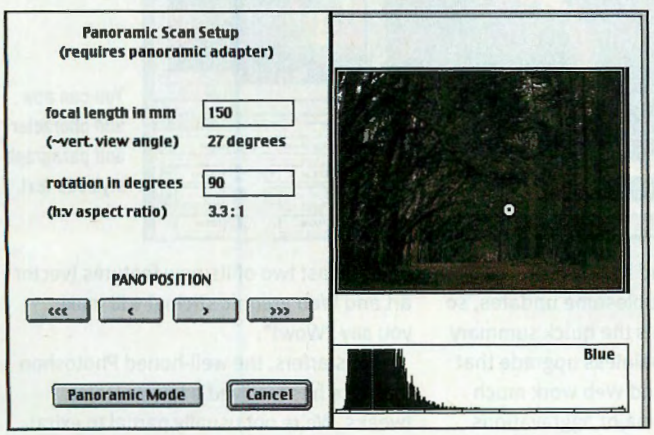
6 Making Adjustments

To fix the focus and depth of field, Johnson compensates in two ways: He stops down a lens (this means reducing the aperture from f-11 to f-16, or taking the lens from a wider opening to a smaller opening), and adjusts the image plane of the view camera to provide more foreground sharpness. To compensate for the smaller aperture, he must change the exposure, which means an increase in scan time. To alter the exposure, he changes the line-scanning time in the software from 1/40 of a second to 1/20 of a second per line (there's a total of 8,000 lines). This doubles the scan time and also means starting over again with a prescan and another full-res scan. Since the software indicates that a full-res scan will take 6 minutes and 40 seconds, Johnson decides to scan a quicker 8MB file, which is sufficient to show him that the branches are much more in focus this time.

7 The Panorama

Now it's time for Johnson to try his hand at a panorama. He first locates a starting point for panning—he does this by rotating the camera via the software while looking through the viewfinder to make sure the camera lines up properly. He then sets how many degrees he wants the camera to rotate—in this case, 90.

It takes 2 minutes for the camera to pan 90 degrees and make the lowest-resolution scan possible—a 5MB, 750-by-2,500-pixel file. The prescan reveals a pleasant surprise—the sheer range of trees the panorama captured is much greater than Johnson had anticipated.



Here, Johnson sets the camera's range of motion and uses the arrows to line up where he wants the camera to start panning. In the focal length setting, he indicates the type of lens he is using (in this case, a 150mm).

He also notices that the image is a little underexposed and lacks some detail. To capture more nuances of shadow detail, he increases the bit depth from 8 to 14 (which the software ends up saving out as a 16-bit file)—in other words, from 256 levels of gray per channel to approximately 16,000.

Now he's ready to scan the scene at full resolution in panorama mode, which will produce a 6,000-by-19,634-pixel, 674MB, 16-bit file. The process takes a tedious 16 minutes and 21 seconds, during which time Johnson and his assistant decide to shield the camera with an umbrella so the wind does not disturb the scanning process—any wind or movement may cause a jitter or distortion in the image. Once the image finishes scanning, Johnson—not having enough time to open a 674MB file on his PowerBook—packs up his gear and heads home to review the results.

Mac Pack Rat

Looking at Stephen Johnson's Mac collection is a little like looking at Imelda Marcos's shoe collection: You don't know where to start counting. Here's what his collection includes: one Mac IIfx, two Quadra 950s (upgraded to PowerPCs), four Power Mac 9500s (upgraded to G3s), one Power Mac 9600 (upgraded to G3), one Daystar Genesis (upgraded to G4), one Workgroup Server 9150 (upgraded to G3), one SuperMac S900, one Twentieth Anniversary Mac, two Wall Street PowerBook G3s, one PowerBook 3400, one PowerBook 540C, and—last but not least—one Power Mac G4.

Trip Tools

With 65 pounds of equipment, you're probably wondering, what *is* all that stuff he carries around? Here are his tools.

Sinar-X 4 by 5 camera; BetterLight Super 6000 digital scanning insert (6,000-by-8,000-pixel trilinear sensor); lenses: Sinaron 65mm, 150mm, and 300mm, Schneider 90mm and 210mm, Goertz Red Dot 600mm; Gitzo carbon-fiber tripod; Prototype panoramic adapter by BetterLight and BayHouse; an additional camera: Kodak DCS 460 on Nikon N90 body; Garmin GPS receiver; and a PowerBook G3 (Wall Street edition)

The finished panorama...well worth the wait.

Cathy Lu wants to travel to national parks for her job. Ahem.

PHOTOGRAPH BY STEPHEN JOHNSON. COPYRIGHT ©2000 BY STEPHEN JOHNSON. ALL RIGHTS RESERVED WORLDWIDE. WWW.SJPHOTO.COM

reviews

Another year, another product-packed Reviews section.

Photoshop 6.0

design & graphics

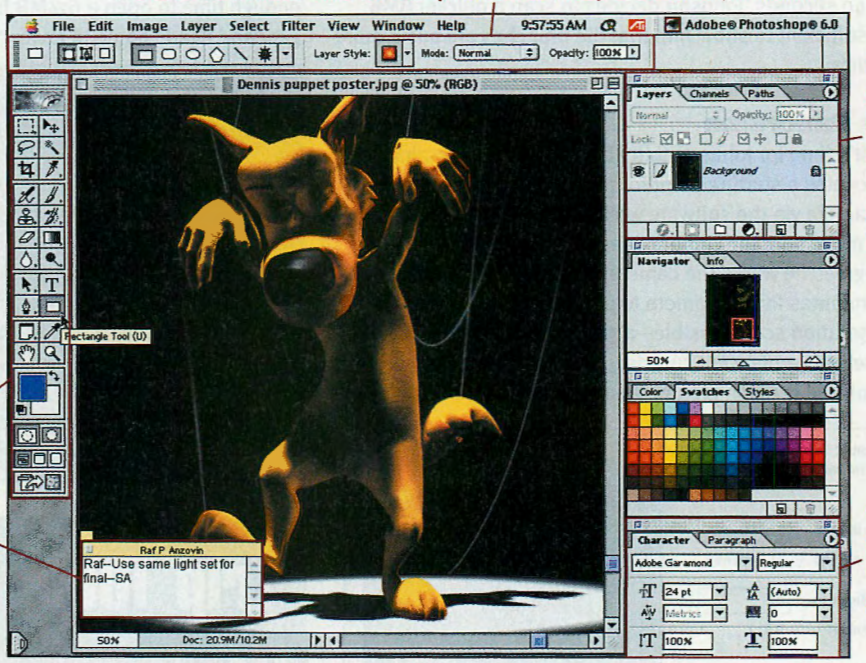
Company: Adobe Systems
Contact: 800-833-6687 or 408-536-6000, www.adobe.com
Price: $609 (SRP), $199 (upgrade)
Requirements: Power Macintosh (multiprocessor G4 recommended), Mac OS 8.5 or later, 64MB of RAM with virtual memory on (128MB recommended), 125MB of free hard disk space, CD-ROM

FREAKIN' AWESOME! The most valuable products, the coolest gizmos.

SPIFFY A solid offering. Overall a good investment.

YEAH, WHATEVER Neither recommended nor rejected. Some might like this, but we weren't impressed.

BLECH! Give us back the time we spent testing this.



When Adobe rolls out a new version of Photoshop, it's always an event. This ultra-heavyweight image editor is an essential tool for art directors, animators, artists, digital filmmakers, publishers, game developers, Web designers, and anyone else who pushes pixels for a living.

Photoshop has had its share of lackluster or even troublesome updates, so for you skeptics, here's the quick summary of version 6.0: It's a painless upgrade that will make your print and Web work much easier. It contains no major aggravations (such as version 5's irritating interface changes and color management debacle), and at least two of its new features (vector art and Web graphic slicing) will make you say "Wow!".

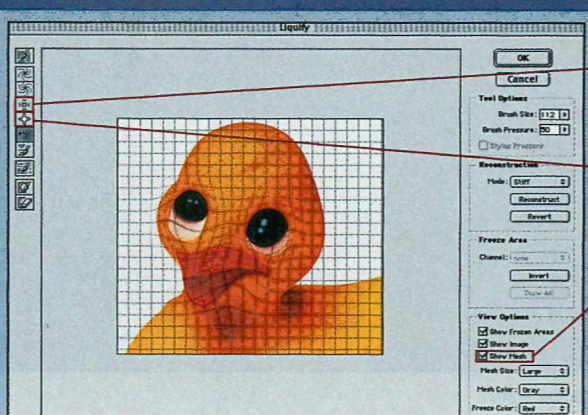
For starters, the well-honed Photoshop interface has received a few welcome tweaks. We're not usually partial to extra toolbars, but the new Corel-style tool options bar (which you can dock at the top

Liqui-ducky

Kai's Power Goo may be last century's old hat, but Photoshop is just catching up. Smoosh around to your heart's content with the new Liquify command.

1 Open an image. (Make sure it's an 8-bit image in RGB, CMYK, Lab, or Grayscale color modes.) Choose Liquify from the Image menu.

2 Try the bloat and pucker tools to create hilarious or horrifying deformations, or turn on Warp Mesh (check the Show Mesh box) and choose a smaller brush to make somewhat more useful modifications.



or bottom of the screen) is well implemented. Not only does it let you park your palettes there, but it also displays contextual tool options intelligently. For example, the measurement palette options expand in the docking bar to allow numeric entry of transform and positional coordinates, replacing the modal Transform dialog box. Now you can actually see the effect on your image when you're entering coordinate data. Moreover, you can enter numbers in mixed units—3 inches by 45 pixels, for instance.

Photoshop used to make you jump through hoops to create a simple box, but the new vector tools simplify that process. In a move that weirdly recalls MacPaint and other long-dead apps, Photoshop now includes rectangle, rounded rectangle, ellipse, polygon, line, and custom shape tools, available from a new shape tool in the toolbar (see "Getting in Shape," p48). These produce editable vector shapes that reside on their own layers. You can use shapes to create vector masks (called layer-clipping paths) and to paint pixels (that is, to make rounded rectangle buttons for Web use). Anyone who's worked with Bézier curves will have no trouble with Photoshop 6's new shapes. Custom shape libraries get you started, and you can create your own libraries or import them from Illustrator.

Beyond drawing shapes, you now have access to Boolean operations—add, subtract, intersect, and exclude—for quickly combining basic shapes to form more complicated objects. You can stroke shapes; fill them with colors, gradients, and patterns; and set their color mode and degree of opacity. Using shapes as layer clipping paths, you can quickly create sharp-edged masks that remain editable throughout the work process. However, don't throw away your vector drawing program just yet—Photoshop still doesn't support many basic vector functions. For example, you can't group or lock shapes. (A less-powerful workaround for grouping is to put multiple shapes on one layer).

Of the vector objects, Photoshop users rely on text shapes most often—and up until now text handling has been one of Photoshop's weakest features. Previously, you couldn't type text directly onscreen. Instead, you typed it into an archaic Text dialog box with minimal formatting options. After making only half-hearted modifications in version 5, Adobe has finally got this feature right. Just click the text tool, select Type Specs from the contextual tool options bar, click within the canvas, and type away (see "Low-Maintenance Type," left).

Adobe has beefed up the text formatting attributes to include hanging indents, justification, word spacing, letter spacing, and hyphenation. The warped text feature is particularly cool. Select the text, choose Create Warped Text, and choose from a variety of sliders that create slants, arches, circles, and other deformations. This new feature saves you a trip to Illustrator or even After Effects. One quirk: Unrendered text looks awful at magnifications other than 100 percent, although it prints fine.

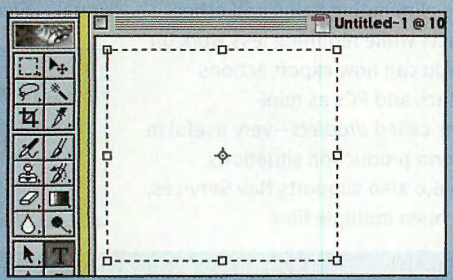
Photoshop 5 introduced the concept of layer effects such as shadows, glows, embosses, and bevels. Photoshop 6.0 takes the concept one step further by adding Layer Styles. You can now save a combination of effects as a Layer Style and quickly apply it to other layers or share it with other artists. Plus, an improved dialog box and more settings make layer effects easier to manage and apply.

Do layer effects such as embosses and bevels make you think of Web buttons? Adobe hopes so. Layer Styles is just one way it has jazzed up Photoshop to appeal to Web designers. If you spend your days slicing and dicing animated Web graphics, you can stay comfortably inside Photoshop for much of

Low-Maintenance Type

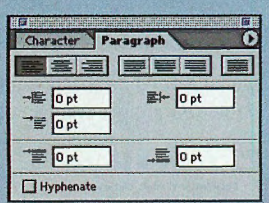
Photoshop 6.0 replaces the reviled Text Entry dialog box with a type tool that's much easier to handle.

1 Select the type tool and drag out a bounding box.



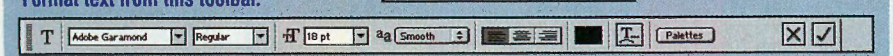
Type your text in a bounding box right on the canvas.

2 Format the text from the context-sensitive toolbar above the window. Clicking the Palettes button brings up Character and Paragraph palettes.

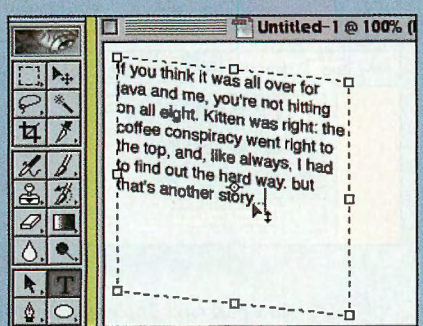


View the new Paragraph styles in this palette.

Format text from this toolbar.



3 Enter your text. Grab the bounding box handles to resize the text block, or rotate it by dragging just outside one of the corners. Select the toolbar's checkmark button to save the text to a new text layer.



Enter or paste your text. Rotate and tilt the text with the bounding box.

in review

audio
DIGIDESIGN DIGI 001/PROTOOLS LE 5.01 p58

design & graphics
ADOBE PHOTOSHOP 6.0 p46

hardware
APPLE IBOOK SE p50
CANON ZR10 p52
RIO 600 p53
ATI RADEON AGP VIDEO CARD p54
VST FIREWIRE RAID ARRAY p55
HEWLETT-PACKARD PHOTOSMART 1218 p64
BROTHER MFC-7400C p66
CANON CANOSCAN N1220U p68
UMAX ASTRA 6400 p70

multimedia
COMMOTION PRO 3.1 p60

fun & games
RISK II p61

productivity
CODEWARRIOR PRO 6 p56
QUIK SYNC 2 p57
BBEDIT 6.0 p62

your work. A new slicing tool makes it easy to create a slice from any layer. You can create dynamic layer-based slices from a multilayer document, and the slices adjust dynamically to accommodate layer changes. Each slice can have its own level of weighted, channel-based optimization—the most flexible approach we've seen. At output time, Photoshop produces a numbered image set and a clean HTML table or CSS code you can easily paste into a Web page editor.

Photoshop can't quite handle every Web-oriented graphic task yet, so Adobe throws in a copy of ImageReady 3. A Jump To button in the toolbox launches ImageReady with the current document loaded. One new feature in ImageReady 3 is the ability to create custom rollover styles (for button glows and the like) based on the layer-based slices and Layer Styles you save in Photoshop. Apply the rollover style to a new layer in another document, and ImageReady slices the layer with the multiple rollover states and effects you've defined.

This release offers a grab bag of other goodies. Better color-management tools mean you can avoid import-export color problems—you can even go back to Photoshop 4's color spaces. (Make sure you have the latest version of ColorSync for best results.) The Kai's Power Goo–style warping tool is not quite as much fun as Goo, but it's a lot more usable (see "Liqui-ducky," p46). The more powerful crop tool has moved back to the top level of the toolbox (for a while Photoshop had it nestled within the selection tool). It allows perspective warping of the selected area when you drag the crop box handles, and for easier viewing it grays out the image area outside the crop zone.

Photoshop's enhanced Extract Image feature does a better job of pulling masks from complex edges (such as hair), in many cases eliminating halos and other mask artifacts while requiring less work on your part. You can now export actions between Macs and PCs as mini-applications called *droplets*—very useful in cross-platform production situations. Photoshop 6.0 also supports Nav Services, so you can open multiple files simultaneously from the Open dialog box. And finally, this version offers Print Preview (better late than never) and PDF export.

We found no major flaws in this revision, and very few minor ones. Perhaps Adobe has gone slightly overboard in catering to Web designers, losing sight of the fact that video and animation people still comprise a large segment of the Photoshop market. And while droplets are great, we still hope for a scripting language that automates Photoshop operations and (eventually) works across all Adobe applications.

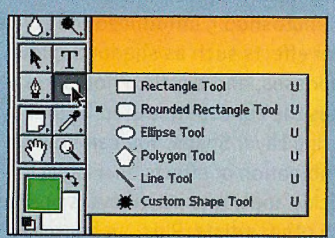
The bottom line: If you've been using Photoshop for a while, you have every reason to upgrade. The vector and text tools and the Print Preview feature are worth the $179 upgrade price. If you are new to image editing, get Photoshop now—it has no equal.—*Steve Anzovin*

good news: Better handling of vector imagery and text. Layer sets and styles. Creates slices and rollovers. Tighter integration with ImageReady. Improved masking and cropping.
bad news: Nothing significant.

Getting in Shape

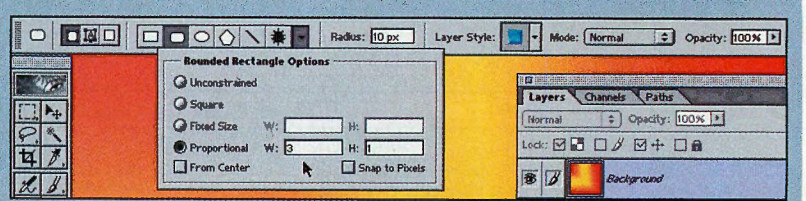
The new Vector Shapes make it easy to create graphic objects. Add a Layer Style, and you've got some serious button-making tools.

1 Choose the rounded rectangle shape from the new shape tool in the toolbox.

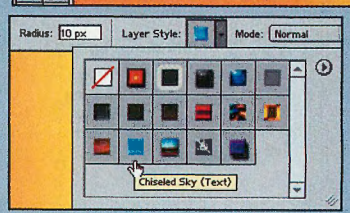


Choose from these options.

2 The context-sensitive toolbar brings up pop-up boxes in which you set the properties of the new shape. You can also experiment with preset Layer Styles.

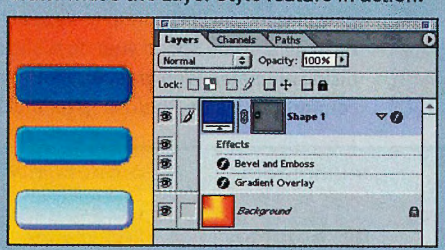


Enter options for the rounded rectangle.



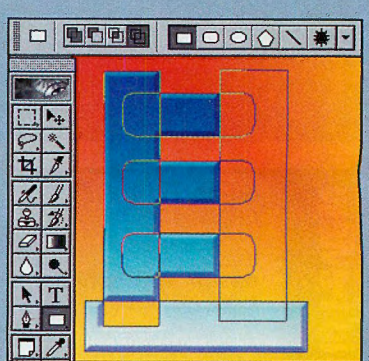
Choose one of the preset Layer Styles.

3 Draw several rounded rectangles to create your buttons. Notice that the colors change depending on how many you draw. That's the Layer Style feature in action.



Layer Styles interactively change the appearance of shapes depending on how many you draw in the Shape layer.

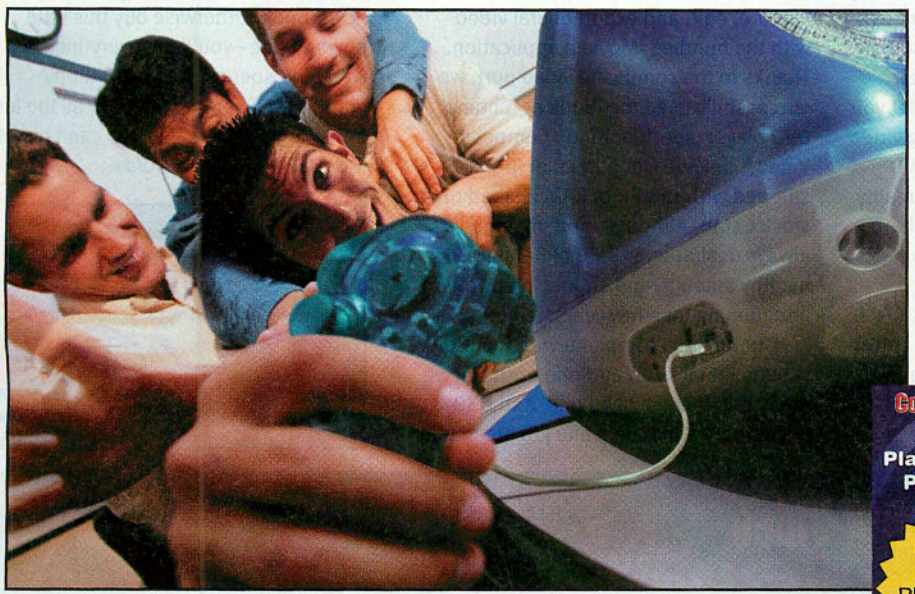
4 Now play with Boolean operator choices in the toolbar to add, subtract, and multiply shapes.



Overlay a different shape and experiment with Booleans.

The Adventures of Connectix® Guy

By day, he uses Windows®



By night, he plays PlayStation® games

He does this all on his Macintosh.

Sure, he could do it like everyone else and have 3 different machines. A PC to operate Windows for work. A PlayStation console to play his video games. And, his Macintosh because it's his computer of choice. But no, he chooses to be more efficient, more productive and less crowded with equipment by doing it all on his Macintosh.

He uses Virtual PC for work, which is like putting a PC in your Mac. He also uses Connectix Virtual Game Station to play many popular PlayStation games on his Mac. With these two award-winning products from Connectix on your Mac, you can be just as independent and versatile as Connectix Guy.

Visit us at www.connectix.com or go to your nearest software retailer.

Connectix

© Copyright Connectix Corporation. Connectix, Connectix Virtual Game Station and Connectix Virtual PC are trademarks of Connectix Corporation. All other trademarks are property of their respective holders.

iBook SE

Finally the iBook SE fulfills its destiny as the best-of-breed low-cost laptop.

PHOTOGRAPH BY AARON LAUER

hardware

Company: Apple
Contact: 800-692-7753 or 408-996-1010, www.apple.com
Price: $1,999 (SRP)
Requirements: 466MHz G3 processor, 128MB of RAM, 10GB hard drive, DVD-ROM, FireWire, USB, composite video out, 10/100Base-T Ethernet, 56-Kbps internal modem

The iBook has finally grown into its potential with the iBook SE. This third-generation low-cost laptop has almost everything you could want in a portable Mac, including FireWire, DVD, and video out, and its beefed-up internals make for the best portable you can buy under $2,499.

Apple has upped the processor to 466MHz and included an ATI Rage Mobility graphics chip with 8MB of VRAM—enough to edit digital video and make the iBook a solid gaming machine at last. The new FireWire and composite video ports let you import and export digital and analog video properly for the first time, and the DVD-ROM drive makes movie playback a reality. Combine that with a 10GB Ultra ATA hard drive, and you have a heavy hitter in a rugged case.

Apple hasn't ignored the iBook's externals, either. It has changed the color of the internal plastics from ice to snow, giving the iBook a clean look. The solid keyboard is a joy to type on, and the external plastics have gone from a matte to a glossy finish—matching the current G4 and iMac lines. (For those who tend to bang their books around, this model retains the rubberized bumpers).

Our iBook performed like a champ. It still has unbelievably long battery life (we played the DVD movie *Starship Troopers* and had an hour of battery power left), and the new FireWire port enabled us to capture, edit, and export digital video with the bundled iMovie 2 application. Thanks to the composite video port, we successfully used the iBook as a home DVD player (see "Cool Tool: Composite Video," below). Our particular iBook shipped with 128MB of RAM instead of the stock 64MB. Although more memory is always desirable, 128MB of RAM is a healthy amount, and should keep you up and running for a few years.

Our one real complaint with the iBook is petty—it lacks an audio-in port. But we rarely find that we need one, and USB microphones that do a fine job are readily available. So this flaw is hardly worth mentioning, especially since the rest of the hardware package is so spectacular. (You can still plug a pair of headphones into the composite video-out port.)

If you're in the market for a Mac laptop and can't decide between the iBook and the PowerBook, here's some help: If you *can't* live without a PC Card slot, a second monitor, or 1024 by 768 resolution, get the PowerBook. Otherwise buy this little powerhouse—you'll get everything you want and spend a lot less. Snappy graphics, powerful processor, all the latest ports, long battery life—you can't beat the iBook SE.—*David Reynolds*

good news: Solid processor and graphics subsystem. FireWire and composite video-out ports. DVD playback. Better plastics and colors. Great keyboard. Killer battery life.
bad news: No audio in. Has only a single speaker. (Hey, we had to find *something* bad about it.)

Cool Tool: Composite Video

The iBook SE ships with a composite video-out port, which lets you mirror your iBook's video to any device with a composite video-in port. This includes newer televisions, VCRs, and many camcorders. This feature lets you show DVD movies on your television as well as print your iMovies to videotape. The port looks like a headphone port (and works like one, too), but it also sends composite video through the special included cable.

To use it, plug one end of the cable (video plus left and right audio cables) into an AV device (such as a TV or VCR), the other into your iBook's video port. The iBook monitor will flash, and some new resolution options will pop up on the Control Strip. Now the TV or other device will mirror whatever image appears on the iBook's monitor. It's really that simple, and it works that well.

This itty-bitty port does double duty as headphone jack and AV port.

Thank God everything's not powered by Voodoo5.

With the world's first hardware full-scene anti-aliasing and our proprietary T-buffer™ cinematic effects engine, the new Voodoo5™ is the most powerful 3D accelerator ever built for the Macintosh. See for yourself @ www.3dfx.com.

HARDWARE FULL-SCENE ANTI-ALIASING: SMOOTHES AND SHARPENS 3D GAMES AND APPLICATIONS YOU ALREADY OWN.	T-BUFFER™ CINEMATIC EFFECTS ENGINE: THE MOST REALISTIC 3D ENVIRONMENT ALLOWED BY LAW.	DVI SUPPORT FOR MACINTOSH FLAT PANEL USERS: DIGITAL EDGE-TO-EDGE CLARITY.

3dfx

SO POWERFUL, IT'S KIND OF RIDICULOUS

Available for Macintosh and PC.

Got enough Coasters?

Wouldn't you rather use your discs for holding data? Yeah, we thought so. That's where Discribe 4.0 comes in. It's our goal to make sure you have fewer coasters and more productivity. Writing CDs shouldn't be a guessing game, unless you need a place for that drink.

DISCRIBE™ 4.0

- New look and feel
- Record vinyl, tape or voice to CD
- Burn MP3 tracks to an Audio CD
- Supports virtually all Firewire, USB, ATAPI and SCSI CD-R/CD-RW drives (over 200 mechanisms!)
- Disc-At-Once (DAO) Audio Support
- Burns most popular CD formats including Hybrid and Video CD
- Burns CDs in the background
- Supports Disc to Disc Copies
- $39.95 Competitive Upgrade

See us at Macworld Booth 4127

CHARISMAC ENGINEERING, INC.

10000 Hill View Rd., Newcastle, CA 95658
sales@charismac.com (800) 798-8726
www.CharisMac.com

© 2000 CharisMac Engineering, Inc. All other trademarks are the property of their respective owners.

Canon ZR10

PHOTOGRAPH BY AARON LAUER

Canon's ZR10 is cute and cheap, but the video quality is less than we expected.

hardware

Company: Canon
Contact: 800-652-2666, www.canondv.com
Price: $999 (SRP)
Requirements: FireWire-equipped Mac, or TV or VCR with RCA connectors

Canon is certainly no spring chicken when it comes to DV camcorders, and this time around it has packed a few big ideas into a compact camera—with a low price. The ZR10 is Canon's entry into the affordable DV market, targeting newbies—but does a good price necessarily make for a good deal? Not in the case of this camera.

Canon packs a number of features into the ZR10, including 10X optical zoom (200X digital), a flexible 2.5-inch color LCD, a color viewfinder, image stabilization, still photo capability, digital effects, and AV overdubbing. Unfortunately, some of these features don't play on par with the competition's. While the optical zoom executed clearly and smoothly, we found the digital zoom absolutely useless beyond the 40X point. The image stabilization did a decent job when we zoomed out, but when we zoomed in, the resulting video looked as if we'd had a beer too many. We thought the fade and wipe effects were pretty cool, though.

Overall, the ZR10's video quality is marginal—importing clips into Adobe Premiere, iMovie, and Strata VideoShop (via FireWire) resulted in some pixilated animation. The camera behaves best when you're shooting in bright, even lighting, though noise artifacts run amok over reflective objects. It delivers poor results under mixed and extremely low-level lighting—the exposure compensation and low-light features can't correct the problems. The camera has no built-in light, making it difficult to record or photograph at night (Canon sells an optional light for $100, but you'll need an additional battery pack).

ZR10 videotaping produced noise artifacts on slightly reflective surfaces, such as the back wires on this cage.

Although we appreciate the device's photo capabilities—and it did take some decent shots—most of our images ended up soft or littered with noise. Also, the only way to extract the still images is via video-capture software. Canon sells an optional device that captures still images—onto a floppy disk...'nuff said. Hello? It would help to include photo-capture software.

On the other hand, the camcorder's sound quality is good and loud, thanks to the 16-bit, stereo PCM recorder (it has 12-bit mode, too). It picked up conversation across a room clearly and handled loud volumes without distortion. The audio dubbing feature came in handy when we needed to edit out a certain four-letter expletive.

Although we wanted to hug it and hold it when we first saw its cute and curvy exterior, ultimately the ZR10's antics made us put it back to bed in its bag. Canon designed this camcorder as a goof-proof device for novice users, but the only thing that's a goof is the camera itself.

—Kris Fong

good news: Good sound quality. Nice LCD features.
bad news: Poor low-light performance. Video noise.

Rio 600

hardware

Company: Sonic Blue
Contact: 408-588-8000, www.riohome.com
Price: $169.95 (SRP)
Requirements: G3 or iMac, Mac OS 8.5.1 or later, 32MB of RAM, 10MB of free hard disk space, USB port, CD-ROM

Her name is Rio, and she fits right in your hand.

PHOTOGRAPH BY AARON LAUER

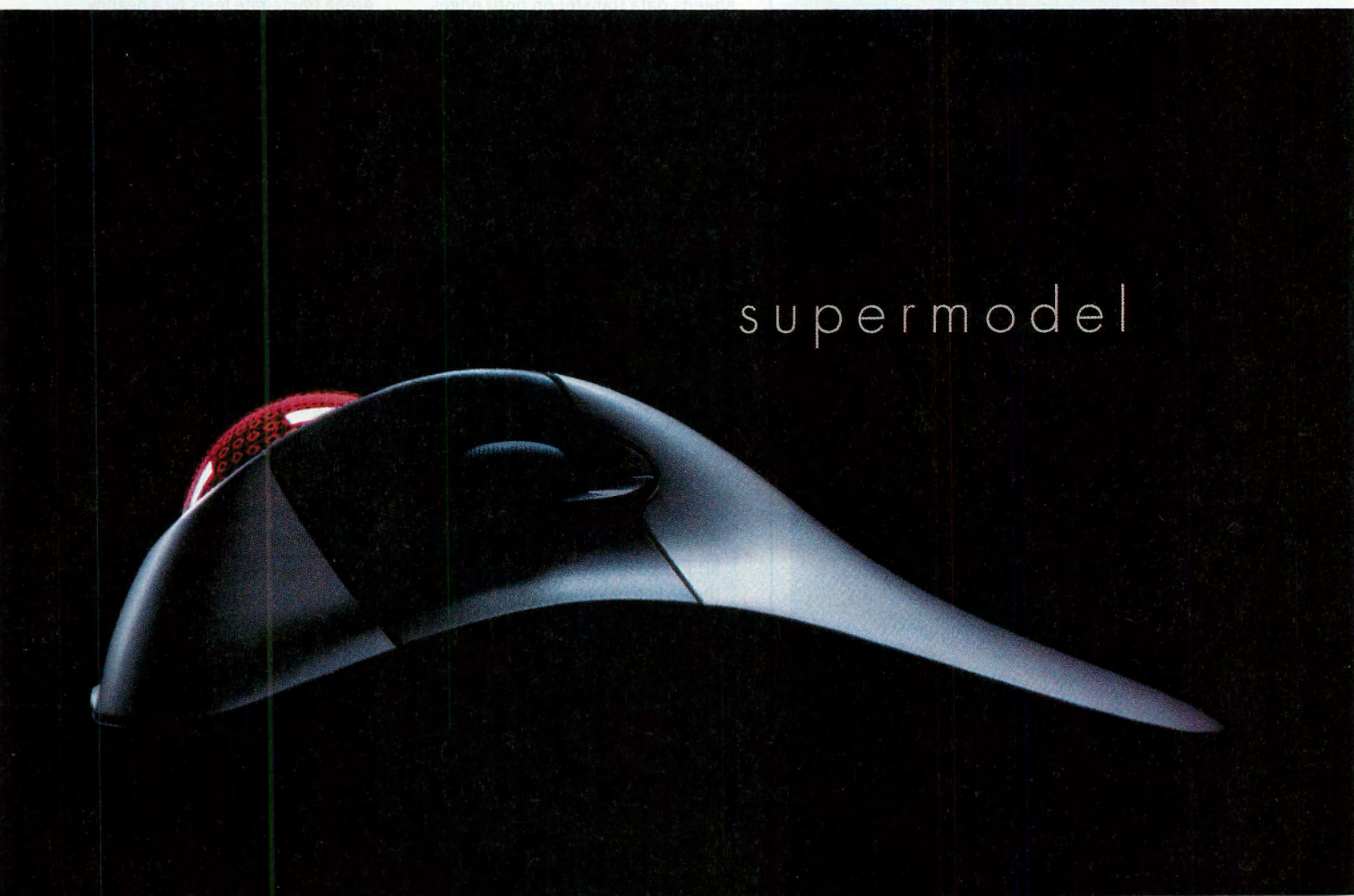
If you're like us, you've had enough of cheesy techno music blasting your ears off at the gym. Well, luckily for you, Sonic Blue (formerly S3, which acquired Diamond Multimedia) provides some solid—and decently priced—ammunition in the form of a slick, teensy MP3 player so light (3 ounces without battery) that your shorts won't sag while it's in your pocket.

With 32MB of internal memory, the Rio 600 sounds great, looks cool, is easy to use, and offers true expandability. The player will use backpack adapters (unreleased at press time)—little doohickeys that attach to the device's back—to add either 32MB or 64MB of memory for $99 and $169, respectively. These adapters currently rely on flash memory, but they're flexible enough to work with other (hopefully cheaper) standards.

The Rio 600 comes with a special version of SoundJam that encodes CDs and supports the transfer of MP3s to your player. Speaking of transferring music, downloading almost 32MB of music on this device took a mere 1 minute and 20 seconds—faster than other portable MP3 players we've tested. Other perks include the cover with belt clip and the ear-shaped headphones. You can delete any track, as well as create different playlists, all via the player itself. You can even customize your 600 by changing faceplates. Whether you *like* the available colors is a different story.

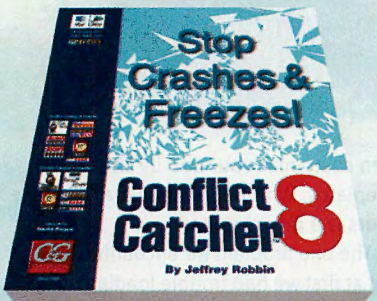
The one problem we encountered is that at first we had trouble loading songs onto the player. S3's technical support suggested upgrading the player's firmware (downloadable from an FTP site) and installing SoundJam with extensions turned off. Since then, our Rio 600 has been working perfectly, and our ears couldn't be happier.—*Cathy Lu*

good news: Small, light, and faster than Superman. Memory upgrades can expand with the technology. **bad news:** Some software and firmware tweaking required to download songs.



Not just ANY ordinary software...

OUR software is above the rest!



Conflict Catcher 8

- *Catch your conflicts!*
- *Manage your startup files!*
- *Learn what those startup files do for you!*

SoundJam MP Plus

- *Encode, convert, and play!*
- *Stream music from the Net!*
- *Beome your own DJ!*

Available at your favorite retail stores, online resellers and mail order catalogs!

C&G

Casady & Greene, Inc.
22734 Portola Dr. Salinas, CA 93908
Sales: 831.484.9228 • 800.359.4920
Web site: www.casadyg.com

Radeon AGP Video Card

PHOTOGRAPH BY AARON LAUER

hardware

Company: ATI Technologies
Contact: 905-882-2600, www.ati.com
Price: $249 (SRP)
Requirements: Mac with AGP port, Mac OS 9 or later, QuickTime 3 or later, OpenGL 1.1.5 or later

The AGP version of the Radeon card packs impressive 3D muscle, along with some 2D flab.

For months, Mac users have been waiting for this moment: ATI has finally released the retail AGP graphics cards for the Mac, based on its spankin' new Radeon graphics chip. (The PCI version is slated to follow soon.) For gamers, the card was worth the wait, as it offers the best 3D performance bar none; however, 2D performance is lackluster.

The Radeon features 32MB of DDR (double data rate) memory, which speeds data transfer on both edges of a clock cycle, and DVD-Video playback. It has both a DVI-I connector (for connecting digital flat-panel displays) and an S-Video–out port. Unfortunately, the Radeon card does not have the Apple Display Connector, so it won't work with Apple's fancy new flat-panel displays.

Installing the card in an AGP-equipped Mac (that means G3 and G4 towers) is fairly straightforward. We had some initial problems with extension conflicts and card installation, but once we installed the ATI drivers with most extensions off, the card worked just fine.

The Radeon card gives great 3D performance, beating out both the Rage 128 and the Voodoo 5 5500 in Quake III Arena frame-rate tests by a healthy margin (see "Pushing Pixels," below, for the benchmark results). On the other hand, it had peculiarly lackluster 2D performance. In our Norton System Info tests (a suite of 11 common 2D graphics calls), the Radeon ranked dead even with the Voodoo 5 5500, and it actually performed *slower* than the Rage 128 Pro in our test system.

The upshot: The Radeon AGP Mac edition is a great card for hard-core gamers, who see frame rates as king. Graphics pros looking for ultimate performance might be better off getting a second PCI card (such as a Voodoo 5 5500 or Rage 128). Of course, if you really *need* that DVI-I connector or killer 3D performance, the Radeon might be the card for you.—*David Reynolds*

Pushing Pixels

The Radeon is an odd bird. Its 2D performance is strictly run-of-the-mill compared to other cards in its category, but its 3D performance is the best we've seen so far. Here's a quick look at the numbers (for those who care, our test system is a 500MHz dual-processor G4).

3D PERFORMANCE
(Quake III frame rates: Larger is better)

Card	Average frames per second
Radeon	43.9
Rage 128 Pro (original equipment)	40.9
Voodoo 5 5500	35.9

good news: Great 3D performance. DVI-I and S-Video–out ports on card. Seamlessly replaces Rage 128 and Rage 128 Pro original equipment cards. 32MB of graphics memory. **bad news:** You have to throw out an existing card to use it. 2D acceleration is lackluster. No ADC connector. Radeon special abilities such as Charisma Engine not yet built into games.

VST FireWire RAID Array

hardware

120GB of smokin' portable power in a 9-inch-high stack.

PHOTOGRAPH BY AARON LAUER

Company: VST Technologies
Contact: 978-635-8200, www.vsttech.com
Price: $999.95 (tower only); 40GB array $2,699.95, 80GB array $3,699.95, 120GB array $4,699.95 (SRP)
Requirements: Mac with built-in OHCI-compatible FireWire port, including iMac DV, any G4 with AGP graphics, and any PowerBook G3 with built-in FireWire ports; Mac OS 9.0.4 or higher; FireWire support and FireWire Enabler 2.5 or higher

The VST FireWire RAID Array is a welcome product for digital media professionals. The 9-inch-high tower holds four VST FireWire Hard Drives that, combined, offer up to 120GB of storage, powered by a single PowerBook battery. You can format the drives in any volume configuration, including level 0, level 1, HFS, and HFS+.

We tested the tower in a simulated, onsite project, running on just the battery. It can run for up to three hours on a single PowerBook Lithium-Ion battery, a valuable feature for video professionals who need high-performance storage independent of a power source.

So how fast is the drive? We formatted all four drives in a single striped volume. It *is* fast, but not as fast as we hoped a RAID array would be. The tower uses VST's portable FireWire drives, which run at 4,200 rpm(revolutions per minute)—much slower than most professional SCSI-based arrays, where the drives run at speeds up to 15,000 rpm. The array is also quite expensive. Established SCSI-based RAID arrays cost about half as much per megabyte—you're paying a premium for the device's amazing portability. Because VST designed these drives for ruggedness, you can also use them as four separate 30GB volumes that you simply take home at the end of your workday. The VST FireWire RAID is a great device for anyone who needs large amounts of fast, portable storage.—*Andrew Tokuda*

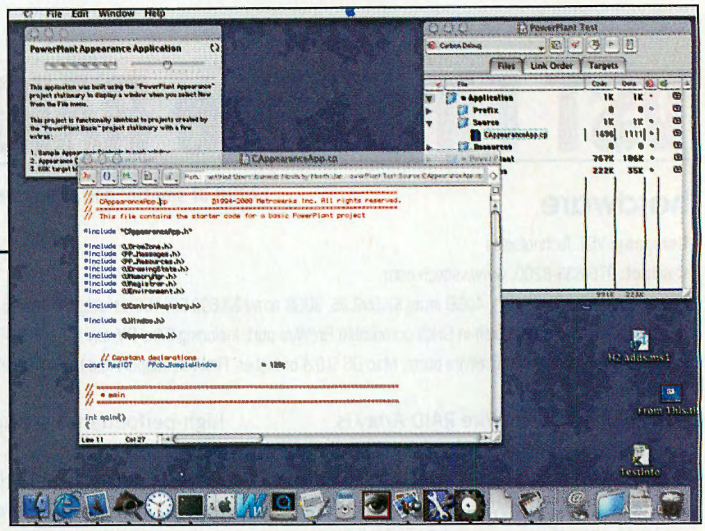
good news: Portability. And who wouldn't want a 120GB RAID?
bad news: Expensive. Performance not as fast as you'd get from a less portable RAID.

superpowers

CodeWarrior Pro 6

productivity

Company: Metrowerks
Contact: 800-377-5416 or 512-997-4700, www.codewarrior.com
Price: $499 (SRP)
Requirements: PowerPC 601 or faster (G3 for Mac OS X development), Mac OS 8.6 or later (OS X Developer Preview 4 or later for OS X development), 64MB of RAM (128MB for OS X), 150MB of free hard disk space, CD-ROM



It's CodeWarrior. It's running native on Mac OS X. 'Nuff said.

About seven years ago, Metrowerks amazed us with the first compilers for creating applications in C, C++, and Pascal for the PowerPC platform. Now the company brings us CodeWarrior Pro 6 with OS X development tools. And while we've got some quibbles with the program, it's still the best compiler available for the Mac.

CodeWarrior is the dominant tool for the creation of C, C++, and Java software on the Macintosh platform. An Integrated Development Environment (IDE), it combines a text editor, project-management software, several compilers, a linker, and a debugger into a single application for viewing C++ classes, comparing files, and managing data during debugging.

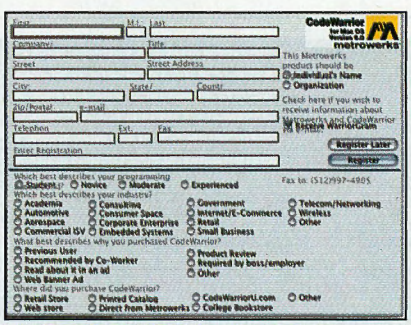
Unfinished Business

As usual, Metrowerks threw a lot of interesting unfinished code, utilities, and tidbits onto its Reference disk. Here's a brief rundown.

Banshee (Better And Newer SIOUX Handy Execution Environment)—A replacement for the venerable SIOUX, which gives standard text-based C and C++ apps a way to handle input and output. Banshee takes advantage of Mac OS 8 and 9 advanced features such as the Multi-Lingual Text Engine.

MW Perl—This one's drool-inducing. Metrowerks is working on a plug-in that will enable the CodeWarrior IDE to run Perl scripts during the build process.

Let's start with the good news: CodeWarrior Pro 6 runs, compiles, debugs, and profiles applications natively in Mac OS X. This version has also Carbonized PowerPlant, CodeWarrior's application framework, so porting existing CodeWarrior projects to Mac OS X should be relatively simple (at least, compared to recoding everything from scratch).



The Registration dialog box is an extreme example of CodeWarrior's problems under Mac OS X—it runs, but with terrible layout problems.

While that's the bulk of the good news, there are other improvements. CodeWarrior Pro 6 supports the ANSI/ISO C++ standard better than ever. C++ programmers can now use templates as template arguments, and make the template keyword a qualifier. CodeWarrior Pro 6 is much stricter about const correctness than previous versions, so check your const declarations if the C++ code that compiled perfectly well in your last version suddenly refuses to work.

Not surprisingly, CodeWarrior is not geared primarily toward writing new OS X code. It doesn't offer any Cocoa support, so for now your OS X applications will have to use Carbon. OS X fans should poke around in the Thrill Seekers folder on the Reference disk to find very preliminary versions of Mach-O support and command-line tools for writing native OS X applications (see "Unfinished Business," left). Also under the OS X Public Beta, you'll run into occasional IDE glitches: Several dialog boxes contain overlapping controls, and we encountered some crashes.

Unfortunately, CodeWarrior's oldest and most annoying problem rages on unabated—its compile-time error messages are among the most useless you'll find in any major compiler. Errors in one file (particularly near the end of a header file) still cause error reports in an unrelated file. A single mistake routinely causes hundreds of subsequent reports, all equally uninformative—"Something went wrong here, and it involves C++ code." A much less offensive fault is that CodeWarrior no longer includes a Pascal compiler and no longer comes with the Windows IDE.

Overall, CodeWarrior Pro 6 is a solid upgrade, but it will likely be the last version to ship without facing serious competition. Once the transition to Mac OS X is complete, CodeWarrior will be squaring off against Apple's ProjectBuilder/InterfaceBuilder freeware. If you're looking to port your Mac OS code to OS X, or if you've run into problems with template-based C++ code, get CodeWarrior Pro 6. Otherwise, just sit back and watch the fun as Apple and Metrowerks try to outgeek each other.—*Ian Sammis*

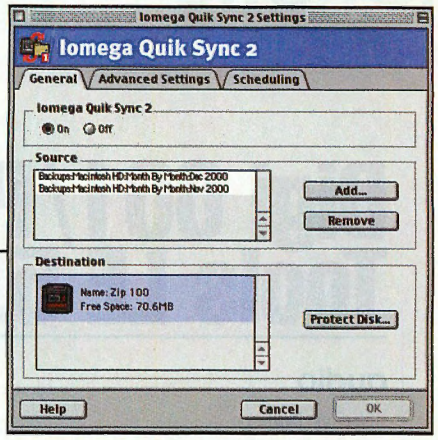
good news: Fully ported to OS X. Better C++ compliance.
bad news: Poor reporting of compile-time errors. No Pascal. Occasional strangeness on the OS X Public Beta.

Quik Sync 2

utilities

Company: Iomega
Contact: 888-446-6342, www.iomega.com
Price: $19.99 (SRP)
Requirements: Power Macintosh, Mac OS 8.1 or later, 8MB of free hard disk space, 2X CD-ROM, Zip or Jaz drive

Iomega has finally resisted the urge to throw giant graphics all over Quik Sync's interface. We're grateful.



One of the more common uses of removable storage devices is as a backup mechanism. Many Zip or Jaz drive owners routinely maintain stacks of backup disks, which allow them to laugh (or at least smile) in the face of hard drive corruption—while colleagues bleakly run one utility program after another in the faint hope that they might recover some small number of files. Iomega apparently knows the needs of drive owners. To appeal to their "better safe than sorry" mentality, the company has released Quik Sync 2—a low-cost, simple, but fundamentally effective piece of backup software.

We should make one thing clear: This is not Dantz's Retrospect (www.dantz.com), the standard in backup software. Quik Sync (unsurprisingly) only works with Iomega hardware. It doesn't compress file backups, and it doesn't restore your working environment as Retrospect would. Instead, it just automates the backup method you'd use if you didn't have any backup software at all—it periodically copies new or altered files onto a Zip or Jaz drive. Quik Sync can also add version numbers to the file names as needed, in case you want to archive the last few versions. One minor quibble: The instructions within the Installation Assistant are slightly inconsistent with Quik Sync's actual interface.

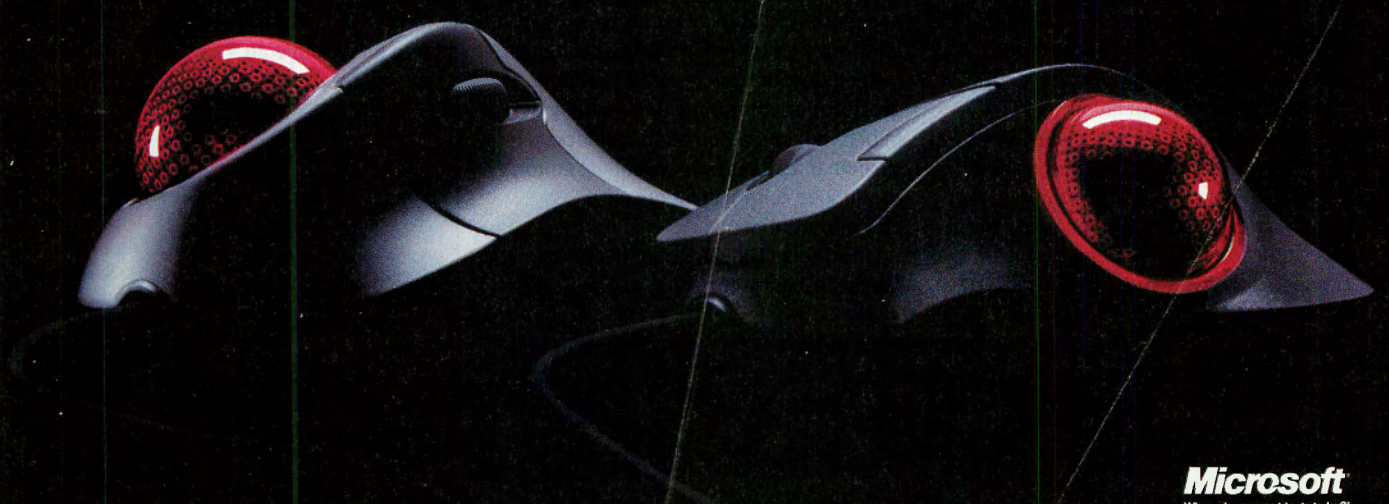
Find Quik Sync 2 on The Disc.

If you don't have Retrospect, we recommend Quik Sync 2, so long as you understand that it's a one-trick pony. You can download the program from Iomega's Web site and use it for up to 30 days before deciding if you want to spend $20 on it. It's not brilliant software, but for the price, it's good enough to bail you out of real trouble.—*Ian Sammis*

good news: Cheap. Uncomplicated.
bad news: Only works with Iomega hardware.

supersonic

Stunning curves. Unearthly technology. Rocket speed. Our new Trackball Explorer and Trackball Optical look different because they are. Improved IntelliEye™ optical technology and our advanced ball design turn the slightest movement into precise cursor action at mind-numbing speed. Available on Macintosh or Windows®-based PCs. www.microsoft.com/mouse



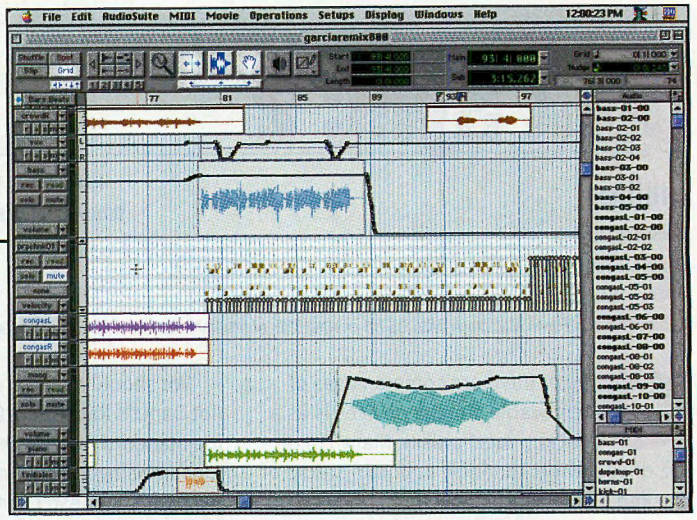
Microsoft
Where do you want to go today?®

Requires Windows 98 or later or Macintosh OS 8.5.1 or later (iMac also requires iMacupdate 1.1). © 2000 Microsoft Corporation. All rights reserved. Microsoft, IntelliEye, *Where do you want to go today?*, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Apple, Mac, and Macintosh are registered trademarks of Apple Computer, Inc.

Digi 001/Pro Tools LE 5.01

audio

Company: Digidesign
Contact: 800-333-2137 or 650-842-7900, www.digidesign.com
Price: $995 (SRP), $799 (street)
Requirements: 200MHz PowerPC or faster (blue-and-white G3 or G4 recommended), Mac OS 8.6 or later, 128MB of RAM (192MB recommended), 26MB of free hard disk space, one free PCI slot, CD-ROM, 832-by-624-dpi color display, one or more Digidesign-supported ATA/IDE or SCSI disk drives



Edit practically everything—from audio and MIDI info to volume and effects automation—in this one window.

This isn't Digidesign's first foray into the budget hard-disk recording market, but it's the most impressive. The phenomenal Digi 001/Pro Tools LE 5.01 hard-disk recording and MIDI sequencing package comes complete with I/O hardware and recording and mixing software. For home studio professionals and quality-minded hobbyists, this combination packs an incredible value. We recorded and mixed a wide variety of records, and this system's quality and functionality astounded us.

A lighter version of the Pro Tools/TDM application (and thousands of dollars cheaper), this software-and-hardware package includes a PCI card, a Digi 001 rack-mountable audio/MIDI interface box, and Pro Tools LE software. It offers 24 record/playback audio tracks; 18 (count 'em!) discrete 24-bit I/Os, including two XLR inputs with independent gain and high-pass filter; 24-bit conversion and digital I/O (S/PDIF); one MIDI port; Real-Time AudioSuite (RTAS) plug-in architecture; and full mix-down automation.

We tested version 5.0.4 on a 450MHz G4 running Mac OS 9.0.4. (Digidesign should release version 5.1 soon). The three-part installation was quick and painless: We placed the PCI card in an empty slot, connected the card and Digi 001 rack I/O with the included cable, and then installed the software. We recommend installing Pro Tools LE on a Mac OS Base extension set and activating only Pro Tools and your essential extensions. Fewer conflicts make for a happier world.

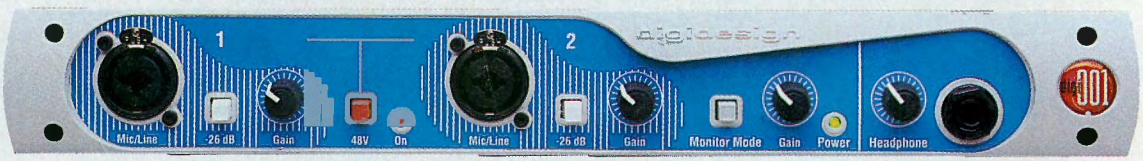
Pro Tools LE offers full hard-disk recording, editing, mixing, and 128-track MIDI sequencing. The GUI revolves around the Edit and Mix windows. In the Edit window, we cut, pasted, arranged, and faded audio and MIDI material. In the Mix window—complete with faders, meters, pan knobs, inserts, auxiliary sends, and master faders—we handled recording, monitoring, plug-in parameters, and fader automation. The two-window setup is both a blessing and a curse. The architecture is intuitive, but as the number of tracks grows, the mouse constantly scrolls and zooms to work on them.

The functional, albeit ugly, MIDI Operations Window handles most MIDI tasks, but don't toss your third-party sequencer yet. MIDI sequencing is relatively new for Pro Tools; the sequencer is adequate for basic recording, editing, quantization (the subtle time-shifting of MIDI data), and automation, but lacks such finer features as an event list editor, continuous controller faders, and play quantization.

Pro Tools LE's RTAS plug-ins utilize the Mac's CPU for processing, so the number of plug-ins you can use simultaneously depends on how much processor power you have. The quality of the RTAS format blew us away. The equalization and compression plug-ins sound identical to their full-blown Pro Tools/TDM cousins, although some of the virtual-effects plug-ins (reverb, delay, and so on) are less impressive and tax the processor. Still, there's plenty of power to go around. In one song, we activated 30 plug-ins across 23 audio tracks with fader/plug-in automation, and we experienced no glitches. Shazam!

Without dropping ten grand for the full system, we got great-sounding audio and a good understanding of the Pro Tools solution. We recorded superclear tracks using the Digi 001 24-bit converters, although we would have liked more than two balanced analog outputs. The supplied literature is essential and thorough—about as thick as the Old Testament. Overall, Digi 001/Pro Tools LE 5.01 is an awesome package that's sure to grow with your audio needs.
—Andrew Freid

good news: Fantastic sound quality. Powerful RTAS plug-ins. Many I/O options. Relatively cheap.
bad news: Weak MIDI section compared to third-party sequencers. Only two balanced analog audio outputs. Requires a lot of mousing.



The Digi 001 audio/MIDI interface box connects your MIDI instruments to your Mac.

You Are King. You Rule.

MAJESTY™

The Fantasy Kingdom Sim

Use your economic might to hire heroes from among 16 different classes. Reward their efforts handsomely to complete 19 royal quests.

Your foes are many. Your enemies have chosen to enlist the services of 32 different types of monsters, each more dangerous than the last.

"Majesty: The Fantasy Kingdom Sim is one of the hottest strategy/sim titles available this holiday season."
Jay Swartzfeger, MacCentral.com

Majesty: The Fantasy Kingdom Sim. Fortify and enhance your castle with over 30 different building types, each one with its own unique strategic and economic benefits. Watch your kingdom come alive as its growing infrastructure begins to attract new inhabitants, both good and evil. Behold the power of magic. Master its heady powers and it will serve your kingdom well. You are King. You Rule.

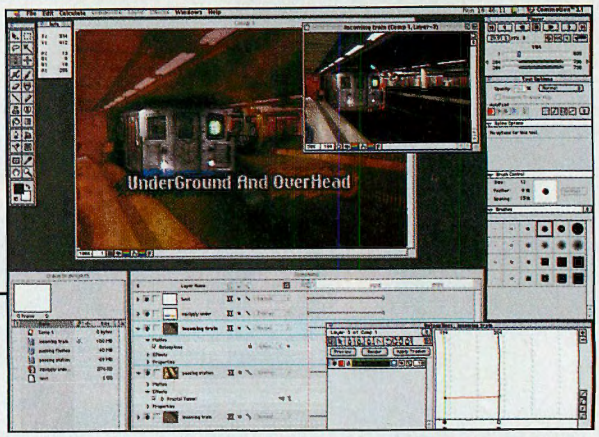
Majesty™ and the game Majesty © 2000 Cyberlore Studios, Inc. Majesty is a trademark and/or registered trademarks of Cyberlore Studios, Inc. All rights reserved. MacPlay™ is a registered trademark of Interplay Entertainment Corp. used under exclusive worldwide license by United Developers, LLC.

MACPLAY™
www.macplay.com

Commotion Pro 3.1

multimedia

Company: Pinnacle Systems
Contact: 800-474-6622 or 650-526-1600, www.pinnaclesys.com
Price: $1,995 (SRP)
Requirements: PowerPC, Mac OS 8.5.1 or later, 64MB of RAM, 30MB of free hard disk space, CD-ROM, video card with millions-plus color capability, QuickTime 4 or later



You can set rotosplines, one of Commotion's most popular features, to track a moving edge. This eliminates a lot of manual work.

Find a demo of Commotion 3.0 on The Disc.

Pinnacle System's Commotion has long been recognized as a powerful tool for adding complex effects to live-action footage. The latest incarnation, Commotion Pro 3.1, adds new features such as the Primatte Keyer and improves on paint tools and project management. This is an essential application for video and film postproduction professionals.

For those new to Commotion, this app lets you enhance video or film by correcting color and stabilizing motion; add special effects such as lightning, fire, and smoke; and edit graphic elements. This is particularly useful for adding objects not originally in the shot or, conversely, taking existing objects away. We're reviewing Commotion Pro version 3.1, the latest release as of press time, but all the features we mention are available in version 3.0 and later.

Painting on layers is handy for cartoon cel painting. Commotion Pro can paint both in a layer window, and directly in the composite window.

Perhaps the most utilitarian new feature is Commotion Pro's real-time preview on both a computer monitor and an NTSC monitor. Allowing you to view your work prior to rendering, this feature saves hours of render time. Using 256MB of RAM out of an installed 640MB (gargantuan but standard for video professionals), we could preview over 4 seconds of full-motion, 720-by-480-pixel, 30-fps footage.

Commotion is a master at isolating objects from their background. Version 3 adds the Primatte Keyer plug-in, a world-class filter for compositing bluescreen elements (actors or props filmed on a soundstage in front of a pure blue or green background). The Primatte Keyer does an excellent job of turning the blue or green background of a filmed shot transparent, integrating it seamlessly with the background layer. Commotion still features its powerful rotosplines—paths drawn on a layer using a Bézier pen tool. You can animate these paths to match the movement of the foreground object, effectively masking out the background. There is no limit on how many rotosplines you can use, and you can control each point on a spline precisely to match the object's shape.

Commotion has also improved its painting features. Painting on a movie frame by frame creates effects resembling hand-colored black-and-white footage, moving oil paintings, and the now common squiggly paint lines over video. Commotion still features a solid painting tool set, including an airbrush, conventional brushes, special FX brushes, and smudge tools, as well as an excellent rubber-stamp brush for cloning sections of an image. Version 3 now features the ability to paint on a layer directly in the composite window, eliminating the need to open a separate layer window. While it's not a new feature, cartoon animators will love Commotion's Cartoon Fill feature for hand-drawn lines that resemble physical animation cels.

Other new features in version 3 include an integrated project environment, which stores relevant clip data within the project file itself. The new procedural compositing and filtering methods give you greater latitude while experimenting, since you can simply delete applied effects, leaving the imported clip untouched.

Commotion's interface and filters make it easy to fix postshooting problems. While we still dream of a version optimized for a dual-processor G4 and Carbonized for OS X, we're not waiting to upgrade. The overall feature set and solid design of Commotion Pro 3.1 offer compelling solutions for today's production problems.—*Mike Caputo*

Celebrity App Match: Commotion Versus After Effects

There are really just two players in the Mac motion graphics and animation arena: Commotion and Adobe's After Effects. Here's a brief feature comparison.

	Commotion Pro 3.1	After Effects Production Bundle 4.1
Frame Painting	Yes	No
Video Output Preview	Yes	No
Motion Tracking	Best	Good
Bluescreen Keying	Best	Good
Unlimited Layers	Yes	Yes
Layer Group Hierarchies (aka Nested Compositions)	No	Yes
Third-Party Filters and Effects	Some	Many
Network Rendering	No	Yes

good news: Outstanding keying, painting, and rotoscoping tools. Live NTSC preview. Excellent motion-tracking feature. **bad news:** Doesn't support nested compositions. No online help. Not compatible with all After Effects plug-ins.

Risk II

fun & games

Company: MacSoft
Contact: 800-229-2714 or 612-249-7600, www.wizardworks.com/macsoft
Price: $29.99 (SRP)
Requirements: 132MHz PowerPC or faster, Mac OS 8.1 or later, 32MB of RAM, 5MB of free hard disk space (155MB recommended), 4X CD-ROM

Delightful animation accompanies your opponent's demise as you make an assault from multiple fronts in Same Time Risk.

There's always a chance that a computer port of a board game will go terribly wrong—not this time, though. Risk II not only succeeds as a translation, but also improves on the original game.

The game offers two main playing options, Classic Risk and Same Time Risk. Classic Risk, as the name suggests, is just like the board game. Players take turns reinforcing, attacking, and making final tactical moves. In Same Time Risk, players make their moves simultaneously, so you have to decide where to place all your armies without knowing where other players are reinforcing. When all players have finished making their choices, the placements are revealed and you can decide where to attack. You make your attack decisions, like your reinforcement decisions, without knowing what your opponents will do. Even attacking is different in this mode—you attack a single target from multiple countries simultaneously.

Hasbro and MacSoft have delivered hands-down the best computer-game translation and version of Risk to date. The graphics and animation are clever and exceedingly well done, as are the effects and music. The outstanding artificial intelligence offers a variety of computer personalities to play against. You can even play over a LAN or the Internet.

If you're a Risk veteran, you'll find a lot of terrific new gameplay in Risk II. If you've never played Risk before, this version offers an opportunity to play one of the greatest strategy games of all time. Bottom line, every Mac gamer will enjoy this one.
—Rick Sanchez

good news: Well-balanced gameplay. Best version to date.
bad news: Un-Mac-like interface. It didn't come sooner.

For more info. please contact us at 1-888-999-2836

Huh?

FireWire / USB / KVM for your Macintosh. by IOGEAR

KVM For Macintosh
With the MiniView™ USB KVM, you can share USB peripherals - including a keyboard, mouse or any combination of USB devices -- and a monitor between multiple USB computers.
MiniView™ USB KVM 2 port (Above)

FireWire Speed
Sleek design and ultra fast connectivity lead us to develop our compact 3 and 6 port MiniHub FireWire. They provide a convenient, Plug-N-Play way to expand your current FireWire set-up.
MiniHub FireWire (Above)

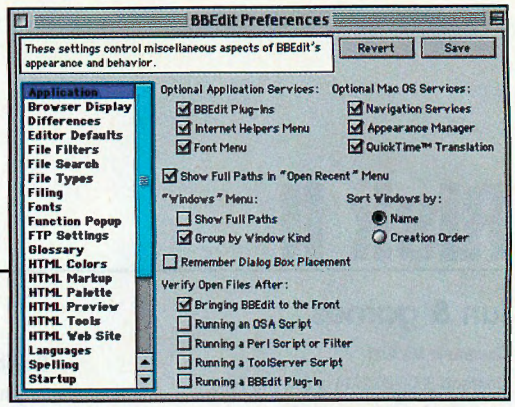
USB 2.0 Connectivity
IOGEAR brings the next generation of USB devices to your Mac with the introduction of USB 2.0 products. With transfer rates up to 480 Mbps, you can be sure IOGEAR is going to deliver the speed that you are looking for.
MiniHub 2.0 USB Hub (Above)

More! Portable
Go to our website ***www.iogear.com*** to get the latest information on our entire product line. Visit us at **MacWorld SF Booth #4700**
FireWire PCMCIA(Top) / USB-PDA Adapter(Right)

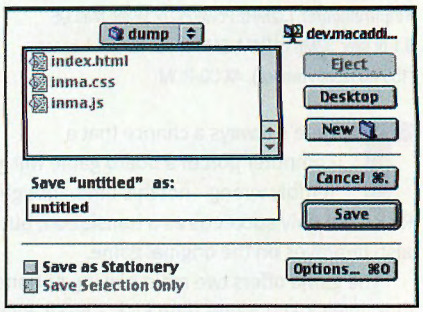
BBEdit 6.0

productivity

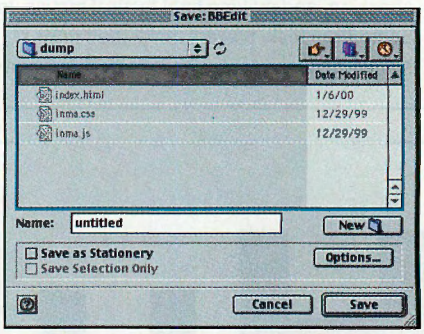
Company: Bare Bones Software
Contact: 781-687-0700, www.barebones.com
Price: $119 (SRP), $39 (upgrade), $79 (competitive upgrade)
Requirements: PowerPC processor, System 7.5.5 or later (Mac OS 8.6 recommended), 6.5MB of RAM, 20MB of free hard disk space



Via BBEdit's detailed Preferences box...



...you can revert back to the old Standard File dialog boxes (pre-Mac OS 8.5)...



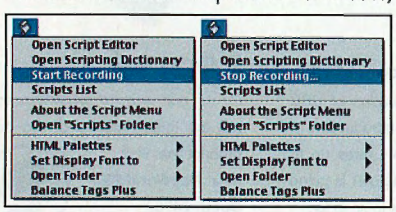
...if you think Mac OS Navigation Services suck.

Find BBEdit 6.0 on The Disc.

If there's such as a thing as a 500-pound gorilla of text editors, BBEdit is (still) it. In fact, the term *text editor* hardly does BBEdit justice. The app can handle anything from plain text, to HTML and XML markup, to C++ source code. Bare Bones Software has updated the product slogan to "It *still* doesn't suck," and the company's not just blowing smoke.

BBEdit 6.0 represents a major under-the-hood overhaul. You'll notice its support for Mac OS Appearance Manager, Navigation Services, and QuickTime translation, all of which you can toggle on and off in BBEdit's Preferences settings. You might also notice the improved syntax coloring of code, scripts, and HTML markup—not a big deal until you consider that BBEdit is now extensible, so users can extend the program's out-of-the-box capabilities. Developers can write plug-ins to give BBEdit syntax support for other scripting, programming, and markup languages. The BBEdit CD includes some of these plug-ins; more are available at the Bare Bones site, where you can also grab the BBEdit Plug-ins Developer Kit.

In terms of human languages, BBEdit 6.0 also represents a leap in the international direction with full Unicode text-encoding support. Now, with the right language support on your Mac (remember, Mac OS 9 includes all the available Language Kits), BBEdit can process and save documents in many non-Roman languages, including Cyrillic, Asian, and Middle Eastern alphabets. However, it can't support Hebrew, Arabic, and other right-to-left languages.



Watch me now. AppleScript recordability makes BBEdit even easier to automate.

BBEdit has been AppleScript-able for years, and now that relationship has matured. In fact, any OSA (Open Scripting Architecture) language can manipulate BBEdit 6; you can use AppleScript (or MacPerl, Frontier, and so forth) to do everything from automating BBEdit's menu actions to creating documents from templates and raw text. You'll also rejoice to know that BBEdit is now AppleScript-recordable: Select Record from the AppleScript menu, do your business, then select Stop Recording and save the script.

We can't mention automation (or even BBEdit) without thinking of the text editor's real power—the mighty find-and-replace window. Bare Bones beefed up this cornerstone of multifile maintenance by extending the maximum length for the search string (the block of text for which you're searching and/or replacing) to a potentially limitless size. Version 6's finding and searching is not only stronger, it's also smarter. New user-definable filters turn the old shotgun-style multifile search into an operation of surgical-strike precision. Where you used to search by folder, you can now filter the folder's files by title, type, creator, creation and modification dates, label, and availability (Projector or CVS status). For even more control, you can add grep (regular expression) patterns to a multifile search filter.

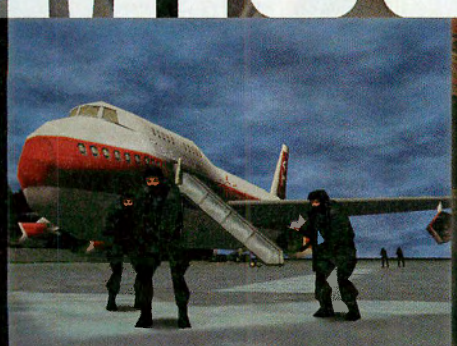
How could you make the king of its class even better? Add OS X support. Unfortunately, as of press time (the Mac OS X Public Beta stage), BBEdit 6.0 doesn't run under Mac OS X's native Carbon environment, though it purrs in OS X's Classic (Mac OS 9) layer. Bare Bones has promised a free upgrade to Carbonize BBEdit by the time Mac OS X ships. We'll be waiting.

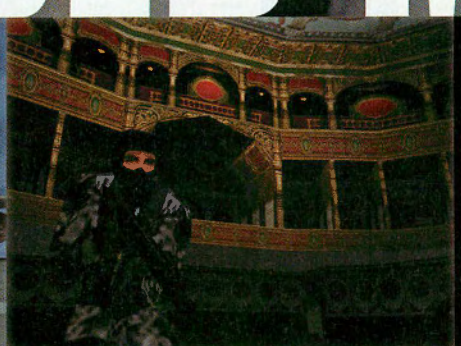
BBEdit's cultlike core following will jump to upgrade to BBEdit 6.0 on principle alone. Of course, the promised OS X patch, improved multifile processing, extensibility, scripting, and language support don't hurt. Web scripting beginners who want to crank out complex pages full of the proverbial bells and whistles should think about investing in a high-end WYSIWYG tool, like Macromedia's Dreamweaver (see *Reviews*, April/00, p48)—which just so happens to ship with a fully integrated evaluation copy of BBEdit 6.0.—*Niko Coucouvanis*

good news: Unlimited string size for search and replace. Supports more languages (both computer and human). Better scripting support. Handles AppleScripts. Multiple clipboards.
bad news: Version 5.x's table builder is gone. Still no key command for save-as function.

Tom Clancy's
RAINBOW SIX
ROGUE SPEAR™

MISSED ME?





Team Rainbow is back in full force. Rogue Spear—the sequel to Rainbow Six—immerses you even deeper in the explosive action of an elite, multinational strike force.

Rogue Spear feels so real, you'll be yelling "Tango Down!" in your sleep for weeks. And the multiplayer action is to die for. Remember, when stalking an enemy: Walk softly but strike like a thunderbolt. You only have one shot to save the world.

Eighteen new missions, full sniper support, a new replay feature and terrorists more realistic and lethal than ever!

Includes 13 Additional Levels with Bonus MISSION PACK: URBAN OPERATIONS

TEEN T CONTENT RATED BY ESRB

Mac

Red Storm Entertainment

INFOGRAMES

©1999 Red Storm Entertainment, Inc. All rights reserved. Red Storm Entertainment is a trademark of Jack Ryan Enterprises, Ltd. and Larry Bond. Rogue Spear is a trademark of Red Storm Entertainment, Inc. Rainbow Six is a trademark of Jack Ryan Limited Partnership, Inc. Published and distributed by Infogrames, Inc. under its MacSoft label. All other trademarks and registered trademarks are the property of their respective owners.

MacSoft®

www.wizardworks.com/macsoft

HP Photosmart 1218

PHOTOGRAPH BY AARON LAUER

hardware

Company: Hewlett-Packard
Contact: 800-752-0900, www.hp.com
Price: $499 (SRP)
Requirements: Mac OS 8.6 or later, PowerMac G3 or G4 with built-in USB connection, 64MB of RAM, USB cable

At its best, this printer can create prints nearly indistinguishable from photographs.

The curvy, charcoal-gray, 17-by-17-inch HP Photosmart 1218 thankfully eschews the current trend toward iMac-style translucency. While this new USB printer cranks out beautiful, photo-quality color prints, it's $500 price tag may limit its appeal for digital camera owners. Nevertheless, they'll appreciate its ability to print either from a Mac or directly from a digital camera's memory card. This is an outstanding printer if you have a digital camera.

The 1218 runs at the same speed as HP's DeskJet 990—it printed our black-and-white text pages at about 2 ppm (pages per minute), while an 8-by-10-inch color page finished in about 5. At its highest-quality setting and on HP's best glossy paper, the printer produced stunning, sharp, well-balanced color photographs with bright, natural colors, pleasing flesh tones, and neutral grays. We found the grain invisible without a good magnifying glass. Plain black text on quality inkjet paper actually looked sharper and clearer than on pages from our trusty 600-dpi LaserWriter, even at type sizes as small as 2 points.

Unlike HP's less expensive DeskJet line of inkjets, the 1218 can print directly from a digital camera's CompactFlash, Microdrive, or SmartMedia card, without a computer. After we printed an index sheet, the LCD display led us through selecting the photos and the number of copies we wanted to print, as well as cropping and adjusting brightness and color. We printed a few 4-by-6-inch snapshots using the 1218's special 4 by 6 tray—no need to unload your letter-size paper, just flip a lever to run off a few shots. Our results looked terrific, though automatic cropping can only select the center of a photo, which we never found useful. We then used the 1218 to download images from our card directly to our Mac—and to our delight it took less time than downloading from the camera.

Printing is a snap. We found the 1218's Print dialog box uncluttered and easy to navigate. The 1218 comes bundled with a two-sided printing module, a removable box that adds 2 1/2 inches to the depth of the unit. It's fun to watch: The 1218 prints one side of a page and—before the page drops into the tray—sucks it back in, flips it, and prints the second side. The HP Print Utility shows a visual estimate of the amount of remaining ink in the two cartridges (color and black).

HP advertises the infrared port for wireless printing as a PC-only feature, but the bundled CDs include a limited version of IsComplete's IrPrint, Palm software that allows a Palm OS handheld to print pages using its infrared port. After installing the software, we printed out Palm calendar dates and memos without a hitch.

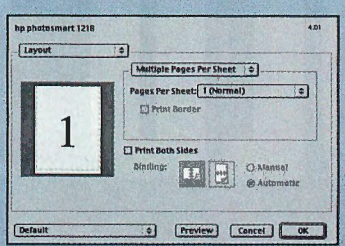
Digital camera enthusiasts should consider the HP Photosmart 1218. For about a 25 percent higher price than the similar DeskJet 990, the 1218 offers the same ease of use and stunning color output, while adding digital camera– friendly features.
—Joseph O. Holmes

good news: Top-quality photo printing. Razor-sharp text output. Convenient 4-by-6-inch photo tray.
bad news: No serial port. Pricey if you don't need the digital camera features.

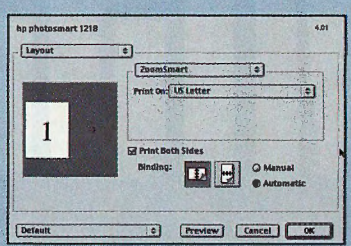
Laying It Out

The Photosmart 1218's Print dialog box allows you to print using some unorthodox layouts. Here's a guide.

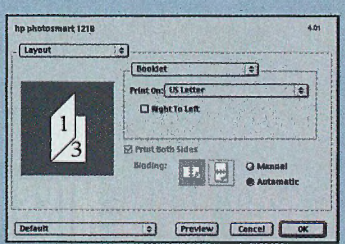
THE FOUR LAYOUTS:



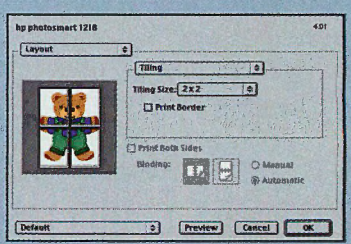
The multiple pages panel lets you print several reduced pages on a single page—saves paper, increases eyestrain.



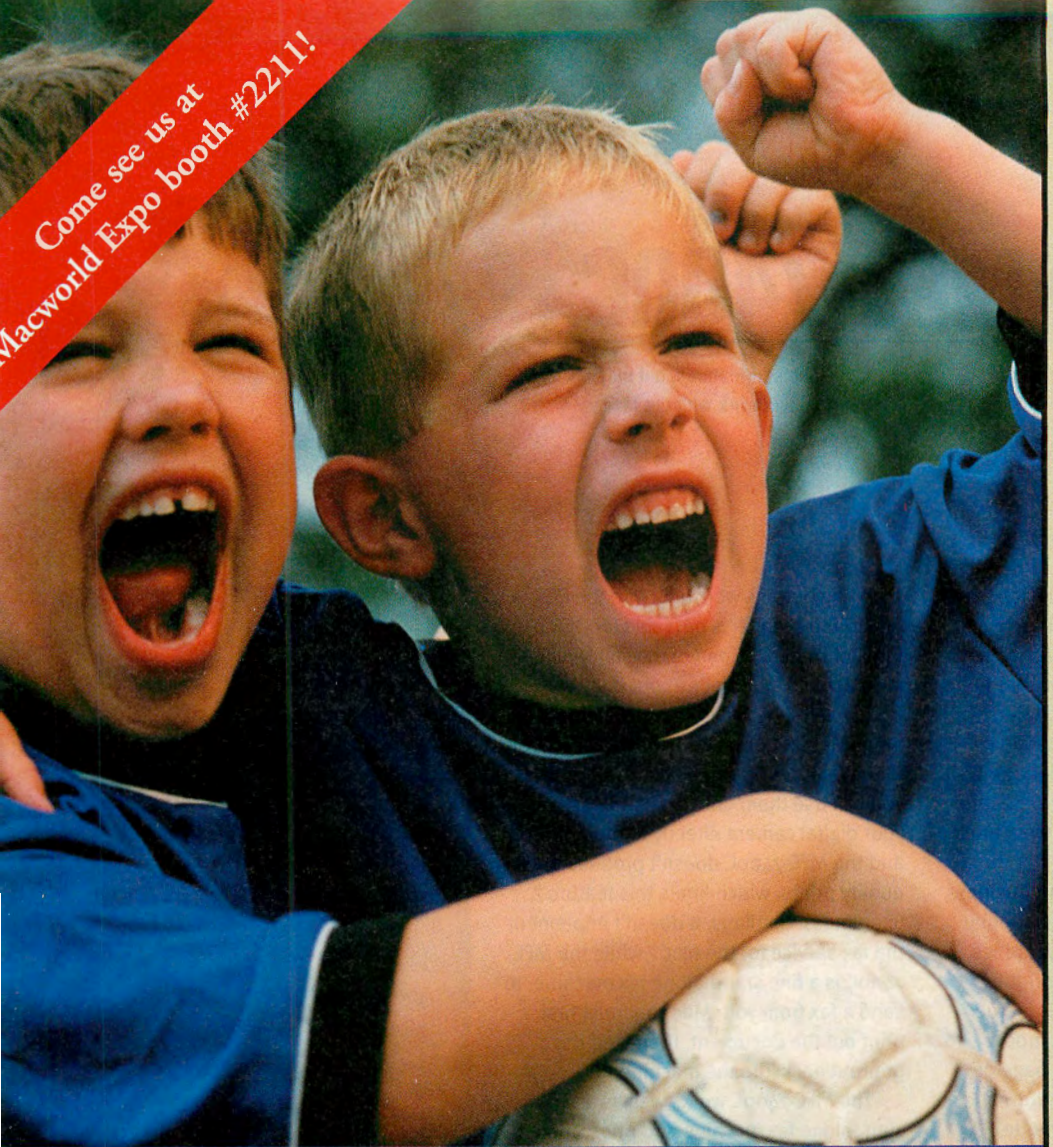
ZoomSmart tries to alter the current document to fit a different paper size (4-by-6-inch photos, for example).



In Booklet mode, the HP Photosmart 1218 uses its duplex unit to print little folding booklets.



If you want to make a giant poster, use the tiling options to enlarge each dimension of the printout two, three, or four times.



MacSOHO™? It rocks!

If your small office has a Mac and PC that need to share files, then you need MacSOHO, from Thursby Software. MacSOHO is the easiest, most cost effective way for your Macs and PCs to become best friends. It's fast, really fast, and secure and it's so simple to use and easy to install on your Macintosh, you'll think it rocks! MacSOHO, the perfect solution for your home or small office.

Download a free evaluation today.

THURSBY Software

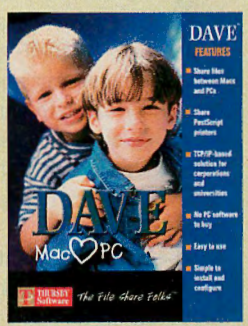
The File Share Folks™

www.thursby.com

© 2000 Thursby Software Systems, Inc.

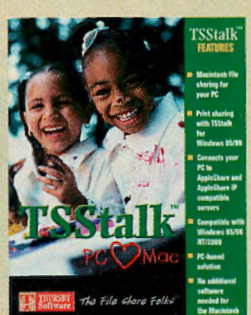
THURSBY SOFTWARE has the perfect file share solution to meet your needs.

The ideal solution for the small office where Macs & PCs need to share files.



The fast, easy way to share files and printers between PCs and Macintosh systems.

Achieve true NFS connectivity between your Mac and UNIX systems.



Windows users can access files on any Mac workstation or AppleShare server.

Brother MFC-7400C

PHOTOGRAPH BY AARON LAUER

Lots of features, but only two work with the Mac.

hardware

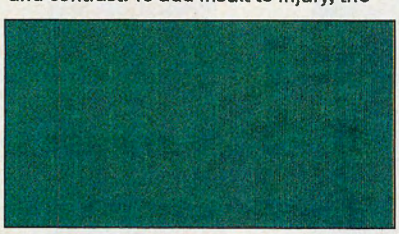
Company: Brother
Contact: 888-879-3232 or 908-704-1700, www.brother.com
Price: $399 (SRP)
Requirements: Power Macintosh G3 or faster, Mac OS 8.1 or later, 15MB of free hard disk space, available USB port

The promise of a single device that serves many different functions for one low price is always attractive. Sadly, the Brother MFC-7400C, an all-in-one printer, scanner, fax, and photocopier, doesn't live up to that promise. While it performs some of these roles adequately, it doesn't do any one of them very well—and its photo-capture features don't work at all on the Macintosh.

The MFC-7400C prints text and business graphics satisfactorily, but will disappoint those looking for higher-quality graphics. Brother claims the device has a printing speed of up to 12 ppm. While this is true when you set the printer to Draft mode, 4 to 6 ppm is more realistic for a full page of legible text at about 3 points (in Normal mode) or even 2 points (in Fine mode).

The MFC-7400C simply didn't meet our standards for photographic printing. In our test image (an outdoor scene including regions of strongly saturated color, muted colors, and gray scale), the device yielded fairly poor color-matching and saturation. On glossy paper, faint but annoying bands appeared (we were unable to resolve the problem by cleaning the jet's nozzles).

With flatbed scanners hovering around $100, we'd nearly forgotten just how awful feed-through scanners were. The MFC-7400's scans aren't very sharp and tend to wind up slightly askew. The included software permits just basic correction of brightness and contrast. To add insult to injury, the scanning buttons work only with the PC driver. The scanner is passable for OCR use (and, of course, as part of the stand-alone fax machine), but that's about it.



The MFC-7400C's banding problem (shown in this enlargement) makes the printer difficult to use as a photographic printer.

Since the device doesn't implement its SmartMedia, CompactFlash, and Composite Video features for the Macintosh platform, you can use them only to send images from your digital camera directly to the printer—and the MFC-7400C doesn't produce photo-quality prints, which limits this feature's usefulness. Similarly, it doesn't implement the fax service for the Mac—while the MFC-7400C is a fine stand-alone fax machine, to send a fax from your Mac you must first print out the document, then feed the printout back into the machine.

The MFC-7400C works well as a standalone fax machine and photocopier. For purposes of sending and receiving faxes, the scanner and printer are perfectly adequate and perform nicely. Printing from the composite video input or from the digital camera cards also works, although for digital camera images the low quality of the printer again becomes an issue.

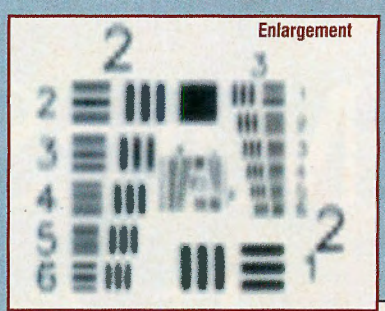
As a standalone fax machine, the MFC-7400C might be quite useful to a small office or a freelancer that needs a printer, scanner, fax machine, and photocopier but can't afford either the cost or desk space for separate devices. Unfortunately, as a Macintosh peripheral the device is little more than a low-end printer tied to a bottom-of-the-barrel scanner. Anyone looking for a scanner or photo printer should look elsewhere—you'll find a multitude of cheaper devices that perform the same functions far better.—*Rich Pizor*

good news: Prints crisp text, even at small point sizes.
bad news: Mediocre scan quality. Prints complex graphics poorly. Tends to scan crookedly. Many functions not available to Mac users.

The MFC-7400C's Scanning at a Glance

Optical Resolution: 1200 by 2400 dpi
Color Depth: 42 bits (24-bit output)
Interface: USB
Power Required: No

Time to scan a 4-by-6-inch photograph at the standard 8 bits per channel RGB	
72 dpi	n/a
300 dpi	39 seconds
1200 dpi	4 minutes, 48 seconds
2400 dpi	14 minutes, 13 seconds



Our United States Air Force test target (standard for testing optics) consists of an inward spiral of horizontal and vertical lines; you can judge the accuracy of a scanner by determining at what point the lines blur together. Each piece of the spiral is numbered; with the naked eye you can barely see group two (shown actual size at bottom right). As you can see, the MFC-7400C's scanner can't even get a decent scan of detail that's visible to the unaided eye. The result? Fuzzy, less-than-sharp scans even without any enlargement.

Live the *Wild Life...*

With The SIMS Livin' Large Expansion Pack!

The SIMS™

TEEN
T
CONTENT RATED BY ESRB

TEEN
COMIC MISCHIEF
MATURE SEXUAL THEMES
MILD ANIMATED VIOLENCE

Mac

westlake INTERACTIVE

MAXIS
Maxis™ is a brand of Electronic Arts™

ASPYR™
Authorized Electronic Arts™ Distributor

WWW.ASPYR.COM

© 2000 Electronic Arts, Inc. EA Games, The Sims, Maxis, the Maxis logo, and Electronic Arts are trademarks or registered trademarks of Electronic Arts, Inc. in the U.S. and/or other countries. All rights reserved. EA Games™ and Maxis™ are Electronic Arts™ brands. The ratings icon is a trademark of the Interactive Digital Software Association. The Aspyr Media logo is a trademark of Aspyr Media, Inc. Macintosh and the MacOS logo are trademarks of Apple Computer, Inc. All other trademarks are the property of their respective holders.

CanoScan N1220U

PHOTOGRAPH BY AARON LAUER

Captain! The USB CanoScan any faster!

hardware

Company: Canon
Contact: 800-652-2666, www.canoscan.com
Price: $199.95 (SRP)
Requirements: G3 processor or faster, Mac OS 8.5 or later, 32MB of RAM (64MB recommended), 20MB of free hard disk space, USB port

You know how some pieces of hardware strike you as *so cool* from the very first moment you set eyes upon them? As Mac users, we usually have good luck when it comes to cool hardware—with the Cube, Cinema Display, and G4, we're hardly short of eyeball candy.

At just under $200, the CanoScan N1220U might tempt you to buy it solely for the sake of its good looks, ignoring the possibility of inferior performance. Fear not, scanner seekers—in this case, substance meets style, and this CanoScan sure can scan.

When we reviewed the CanoScan N656U (*Reviews*, Oct/00, p54), its high-quality scans, sleek shape, and small size earned it a *Freakin' Awesome*. The N1220U is exactly the same machine with one difference—four times the resolution! Oh, and the little button on the front is silver, not purple. Two! Two differences—four times the resolution, a silver button. Oh, and it costs $70 more. Three differences! We'll stop at three to avoid unpleasant legal issues with Monty Python.

The N1220U's 1200-by-2400-dpi resolution is superb—just fine for the average desktop publisher or graphic artist.

These are the *warmer* faces we mention. Recognize anyone?

The 8.5-by-11.7-inch scanning area will satisfy the average user's needs, but said graphic professionals might find it too tight. As you'd expect from a 1,200-by-2,400-dpi scanner, it handles line art with crisp edges, nearly devoid of pixilation. The N1220U also takes outstanding color scans, although (as with most scanners) the standard settings for photographs produce rather dark images. For example, our scan of an indoor close-up of two faces produced an image that came out a bit warmer and darker than the original. You'll have to either spend some time tweaking the settings or make the necessary changes in a photo-editing program—several ship with the scanner, including ArcSoft PhotoStudio and Adobe Photoshop LE 5.0. Canon also bundles ArcSoft's photo-cataloguing software, PhotoBase, and the inevitable OCR package (in this case, Caere's OmniPage 8 SE).

The N1220U shares its biggest shortcoming with other USB scanners—pumping large amounts of data through that slow 12-Mbps USB connection takes a lot of time. This isn't a terrible problem, but we can't help thinking what potential this scanner would have with a 400-Mbps FireWire connection—a 6-by-3-inch color photo at 300 dpi took 30 seconds to scan on the N1220U, for example, compared to half that time on the FireWire-equipped Umax Astra 6400.

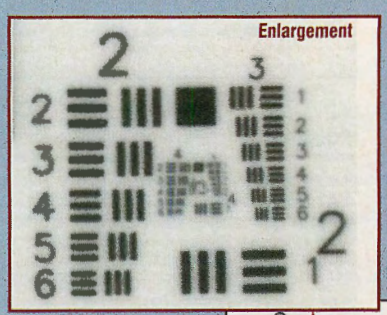
With the myriad of scanners on the market, choosing just one can be a torturous prospect. The Canon N1220U offers good performance, looks, and speed for a scanner in this price range. You won't go wrong with this choice.—*Chris Imlay*

good news: Great performance within an even greater case.
bad news: USB is quite slow.

The CanoScan N1200U at a Glance

Optical Resolution: 1200 by 2400 dpi
Color Depth: 42 bits (24-bit output)
Interface: USB
Power Required: No

Time to scan a 4-by-6-inch photograph at the standard 8 bits per channel RGB	
72 dpi	16 seconds
300 dpi	37 seconds
1200 dpi	4 minutes, 13 seconds
2400 dpi	45 minutes, 18 seconds



You can judge the accuracy of a scanner by seeing at what point the lines blur together on this United States Air Force test target (standard for testing optics). At actual size, the naked eye can barely make out the target's first inner square (the region inside red square). But as the enlargement shows, the N1200U's 1200 by 2400 resolution distinguishes between lines that the human eye cannot—which results in a crisper printed image.

Programming Doesn't Have To Be This Difficult. It's REALbasic!

NEW Version! REALbasic 2.1* FREE Update!

REALbasic is the award-winning, visual, object-oriented BASIC development environment for the Macintosh.

REALbasic is powerful and easy to use. You can build anything from prototypes to complete professional quality applications for both Mac OS and Windows. Whether you are a hobbyist, a professional programmer, or someone who needs to build a program for a specific task quickly and easily, REALbasic is the tool for you!

Simply drag and drop user interface elements into your application's windows and dialog boxes to create anything from a small utility to a large application or the next great game—faster and easier than ever before. Experiment, explore, learn, and innovate as you build your applications step by step while REALbasic handles all the details for you so you can concentrate on what makes your software great—your ideas! With the Professional Edition you can even access most databases and create applications that run on Windows.

Go to www.realbasic.com NOW to download a FREE trial version or call 512.263.1233.

REALbasic®

MacPower 2000 Products of The Year

MacHome

Macworld

Apple Design Award

2000 Runner-Up - Best Macintosh User Experience

Mac Fan MVP '99 MOST VALUABLE PRODUCT

MacAddict

*Free update for all owners of REALbasic 2.0 and above. REALbasic and the REALbasic logo are trademarks of REAL Software, Inc. Apple and the Apple logo are trademarks of Apple Computer, Inc., registered in the U.S., used with permission. All other trademarks are the property of their respective owners.

Umax Astra 6400

PHOTOGRAPH BY AARON LAUER

hardware

Company: Umax
Contact: 800-232-8629, www.umax.com
Price: $250 (SRP)
Requirements: G3 or faster, Mac OS 9, 64MB of RAM, 250MB of free hard disk space, CD-ROM, FireWire support

We feel the need, the need for speed! Fortunately, that yellow logo on the front is no hood ornament—it's the reason this puppy scans much faster than any other scanner we reviewed this month.

Don't let the snazzy graphite lid atop the Astra's bland plastic case distract you from the far more important FireWire logo on the front. While other scanners squeeze data through paltry USB connections, the Astra 6400 pipes images through the same fat FireWire cable your Mac uses to import digital video. The result: an affordable FireWire scanner (the first we've seen) that's more than twice as fast as its USB-based competition.

We'll spare you the bear puns and just say that the Astra 6400 brought out fine details in even our most amateurish snapshots.

The 6400 shares a few high and low points with its relatives in the Astra series. On the minus side, the scanner lacks an on/off switch, and the case and lid feel as flimsy as ever. On the plus side, installation is flawless, customizable buttons at the front of the scanner allow one-touch scanning and copying, and the 6400 includes Umax's sterling VistaScan software. VistaScan's beginner mode lets novices scan with a single click, while the advanced mode offers powerful image-tweaking features, such as filters and level controls, in a pleasantly efficient interface that lacks the clutter of a ScanWizard. We only wish Umax had included a button on the scanner to turn its lamp on and off, instead of forcing us to use a Control Strip module.

In our tests, the 6400's image quality was nearly perfect. Scans at resolutions as low as 150 dpi boasted sharp details and vivid colors, whether we were scanning family snapshots, magazine photos, line art, or text pages for OCR. Even when magnified 200 percent, images displayed little or no pixilation. However, Umax's automated image-correction feature sometimes went overboard on color saturation and brightness.

Oddly enough, the Astra 6400 was slightly slower when processing low-resolution images than some USB scanners we've tested. At 300 dpi, an ordinary 4-by-6-inch photograph took 20 seconds—4 seconds longer than a previous test we ran with the USB Astra 3400.

But when it came to high-resolution images, the 6400 practically roared. At an extremely high resolution (2,400 dpi), a 4-by-6-inch photograph scanned in just under 4 minutes. The USB model took more than 9 minutes to do the same job.

The Astra 6400's $250 price tag may seem steep compared to the numerous USB models on the market in the $99 to $150 price range, but it's actually one of the least expensive FireWire scanners available. While the 6400 isn't the best choice for average users (for simple, low-resolution scans, a cheap USB scanner would be fine), artists and photographers with high-resolution scanning needs will definitely want to ditch their USB cables and start working in the fast lane.

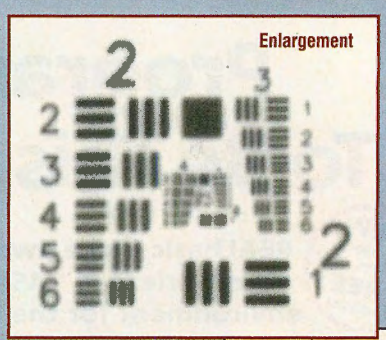
—Nathan Alderman

good news: Speedy scans. Crisp images. Great software.
bad news: More expensive than USB scanners. Uneven performance.

The Umax Astra 6400 at a Glance

Optical Resolution: 600 by 1,200 dpi
Color Depth: 42 bits
Interface: FireWire
Power Required: Yes

Time to scan a 4-by-6-inch photograph at the standard 8 bits per channel RGB	
72 dpi	12 seconds
300 dpi	20 seconds
1,200 dpi	1 minute, 57 seconds
2,400 dpi	3 minutes, 56 seconds



You can judge the accuracy of a scanner by seeing at what point the lines blur together on this United States Air Force test target (standard for testing optics). At actual size, the naked eye can barely make out the target's first inner square (the region inside the red square). But as the enlargement shows, The Astra 6400's 600 by 1200 resolution works well for most images, so long as you don't try to enlarge them too much. This scanner's strength is speed not high-end graphics.

The Freedom of FireWire

With VST's industry leading line of ultra-portable FireWire peripherals, you've got the reliability, speed and connectivity to do what you want, where you want.

From high-performance, ultra-thin hard drives that fit in your hand, to the full height hard drives that stack on your desktop, VST gives you the power you need to keep going. From FireWire CD-R/W drives to Zip drives, our products will enhance your productivity whatever you do, wherever you are.

Whether your passion is digital video or basketball, VST has the solutions you need to get there. Fast. Visit us at **www.vsttech.com** to learn more about what VST can do for you.

Ultra-Thin FireWire Hard Drive

Full Height FireWire Hard Drive and Zip Drive

CD-R/W Drive

FireWire 100 & 250MB Zip Drives

www.vsttech.com

Designed for Microsoft® Windows®98

Mac

Iomega, the Iomega logo, Zip, and The Capacity To Do More are trademarks of Iomega Corporation. All other trademarks are property of other respective holders. Iomega patents protected by patent applications pending in the US and other countries. Apple, Macintosh, the Mac OS logo, PowerBook, and iBook are registered trademarks of Apple Computer, Inc. SuperDisk is a trademark of Imation Corporation.

VST

SmartDisk Personal Storage Systems

powerplay

The wages of Sin are death—if you're a lousy gamer.

Brrr—that's some chilly weather for weeding out terrorists in Rogue Spear, the follow-up game to Rainbow Six.

Get Ready to Rumble

Another Great Gaming Season—Can You Stand It?

Find a copy of Runestone 1.0.1 on The Disc.

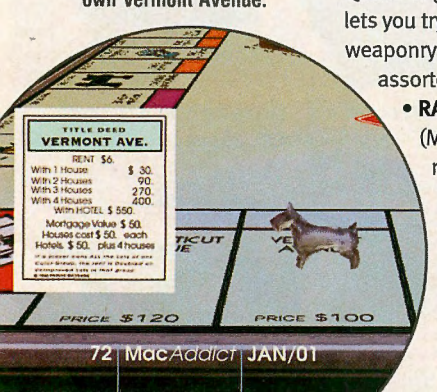
Since the bad old days of 1996 and 1997, gaming on the Mac has been on the rebound—and the twitchy among us have never been happier. This year's upcoming games list (most of them available just in time for the holiday buying season) is pretty darned impressive: not just for one or two blockbuster releases, but rather for the sheer *quantity* of those releases. Here's a look at some of the games you can expect to see over the next few months.

What's Coming Soon

These upcoming titles should come out within a couple of weeks after you read this article—if not sooner.

- **DRIVER** (MacSoft)—Finally, this role-playing driving game makes it to the streets. You play the role of an undercover cop, posing as a driver for the mob. Expect lots of burning-rubber action on realistic New York, Miami, and San Francisco streets.
- **JEOPARDY** (MacSoft)—The answer is Jeopardy. The question: What is the hottest quiz-show–based game to hit the Mac?
- **LINKS LS 2000** (MacSoft)—Oh, yeah—it's time to hit the links and shank those balls into the rough with this update on classic Mac golf action.
- **MONOPOLY** (MacSoft)—Y'know, hotels on Baltic Avenue and Mediterranean Avenue can be surprisingly effective in decimating your opponents, especially when rendered in eye-popping 3D.
- **RUNE** (Human Head Studios)—Ever get the bloodthirsty urge to become a Viking and slaughter your enemies? Rune will let you satisfy it without getting arrested.
- **STAR TREK VOYAGER: ELITE FORCE** (Aspyr)—A new first-person shooter based on the Quake engine, Star Trek Voyager: Elite Force lets you try out even more fancy Federation weaponry against the Borg and other assorted baddies.
- **RAINBOW SIX: ROGUE SPEAR** (MacSoft)—Following up on the release of Rainbow Six, based on Tom Clancy's novel, MacSoft is offering a Mac version of Rogue Spear, including the Urban Ops mission pack.

It's tough to take a shot from behind the leader board—the cool thing about Links LS 2000 is that it *has* a leader board you can hide behind.



Better hope there's no fire hydrant nearby—unless someone else happens to own Vermont Avenue.

- **LIVIN' LARGE** (Aspyr)—That's right, Sim torturers: Aspyr is giving you a whole new set of characters, furniture, houses, and all kinds of other stuff to add to your Sims experience. It's up to you to misuse it.

What's on the Horizon

These games are on their way in the next couple of months—we can only drool in anticipation.

- **DIABLO II EXPANSION PACK** (Blizzard)—Bad news for those who wasted countless hours on Diablo II: You'll now have the opportunity to waste even *more* time when the Diablo II Expansion Pack comes out in the first half of 2001. It features more character classes, new monsters, weapons, and increased Stash storage.
- **ESCAPE FROM MONKEY ISLAND** (Aspyr)—Aspyr has landed the fourth vessel in this tongue-in-cheek Lucas Arts adventure series. This time it has a pirate twist, done in 3D.
- **NEED FOR SPEED: PORSCHE UNLEASHED** (Aspyr)—Fans of famous Tom Cruise movie lines (careful—you'll date yourself, and not in a good way), as well as closet Porsche-lovers, will appreciate the title of this mission-based racing game, complete with police cars and crashes.
- **SIM THEME PARK** (Aspyr)—Wannabe Walt Disneys can fulfill their own theme park aspirations with this simulation program—minus the whole Disney copyright infringement, of course.
- **TOMB RAIDER: CHRONICLES** (Aspyr)—Take Lara Croft on four new adventures involving a German submarine, Roman ruins, and a rooftop landscape as you search for four artifacts.
- **WARCRAFT III** (Blizzard)—Although it's been a while since we've seen anything involving our good friends the humans and the Orcs, they're back for another battle royal in this luscious adventure. It's coming, but not terribly soon.
- **WORMS ARMAGEDDON** (MacSoft)—Worms fans will have a reason to get off their bellies and cheer when this update to the classic hits. You control an army of heavily armed nematodes in a quest to wipe out your enemies.—*DR*

It's the great spaceship graveyard—where the *Star Trek Voyager* TV series is destined to find a home, and where you'll play scenes from Elite Force.

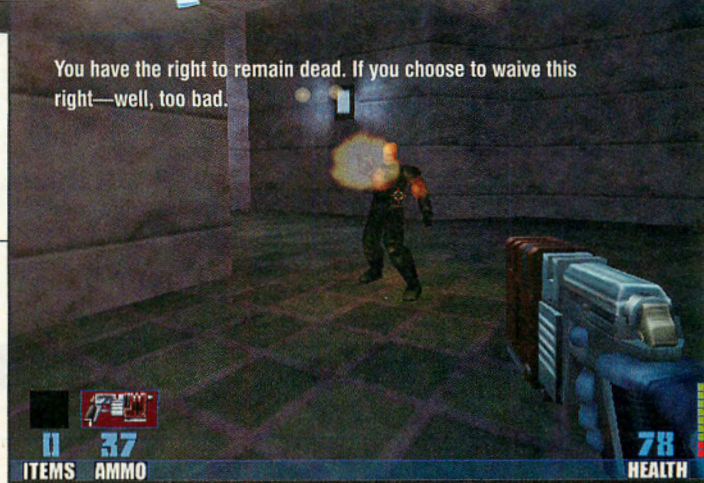
Sin

A Second-Millennium Hit Makes Its Belated Appearance on the Mac

If one can find a silver lining in the Mac gaming drought of 1997 to 1998, it's that a lot of companies built up a large archive of good games, and they're finally porting them to the Mac platform (now that they no longer consider the continued existence of the Macintosh a legend akin to Santa Claus, alien abductions, and the healing powers of magnets). Yesterday's shortage has become today's surfeit. Sin, a first-person plot-based shooter (a genre we haven't seen since the death of the Marathon series), is among the golden oldies that are finally coming over.

Sin presents us with yet another gritty, cyberpunk future (we've turned 180 degrees from the days when we found the grimy spaceships of *Star Wars* remarkable; these days bright, optimistic futures seem astonishingly rare unless Paramount licenses them). As a private police officer, you must battle, reason, and occasionally sneak your way through a plot that does justice to the anime tradition that inspired it. Since you're a police officer, not everyone is a legitimate target—along with the villains, you'll encounter a number of innocent bystanders, whom you should do your utmost to protect. That's about as far as the whole cop theme goes—officers in this future don't seem to sweat such niceties as the Miranda law.

For a Quake II–based game, Sin is remarkably detailed and entertaining (although you'd never mistake it for Quake 3 Arena or Unreal Tournament). We couldn't obtain a final version of Sin by press time; watch for a full review in a future issue.—*IS*



Runestone Rocks

This Simple Game Will Steal Hours of Your Life

Sometimes the simplest of concepts makes for great gaming. Runestone, a $15 game from Divinity Software (www.divinitysw.com), is a basic four-in-a-row game, but it'll keep you entertained for hours. In this game, four players place stones on a big checkerboardlike playing field, one at a time, anywhere they like on the board. Each stone has three characteristics: a symbol on the front, a symbol color, and a stone color. If four stones in a row (vertically, horizontally, or diagonally) share any one of these characteristics, then the player who laid down the last stone in the series gets credit for what the game calls a *natural match.*

That's it as far as gameplay goes. But that's just the start of things in terms of strategy. Even though the game has few rules, they're just enough to give you endless playing options—and to keep things interesting far longer than you'd expect.—*DR*

All those letters, colors, and symbols mean something—put four of the same symbols, stone colors, or symbol colors in a row to get a natural match. The largest number of matches wins.

Screen Shot of the Month

We always appreciate using the wrong weapon for the job (as long as it's a *big* weapon), so if you have a great shot of that (or of anything else game-related), send it our way at letters@macaddict.com. We'll consider it for this slot—or at least we'll enjoy your spectacular gaming moment.

Artist's Statement
I smoked that guy.—*Steffen Bergen*

Find Internet Explorer's Hidden Tricks

by Joseph O. Holmes

EASY

TOUGH
This stuff's for the pros.

TRICKY
It'll take some effort, but you can do it.

EASY
The fundamentals, if you will.

WHAT YOU'LL NEED

- **Internet Explorer 5.0**

ILLUSTRATION BY SIMON SHAW

If you actually kept track, you'd probably be shocked to discover that you spend a *lot* of time surfing the Web. It never seems like much—a quick scan of the MacAddict Forums here, a check of your stock prices there—but before you know it, you're spending more time surfing the Web each day than you previously spent exercising in any given month.

Luckily for you, Internet Explorer is chock full of hidden features to speed up your surfing, so you can spend a bit more time each day moving muscles that aren't connected to your fingers. You activate some features by holding down the Control key, others by holding down the Command key, and still others with the mouse button. Master these hidden features and you'll find Web surfing both easier and faster. You probably won't spend less time on the Internet, but you'll cover more ground. Watch and learn, grasshopper.

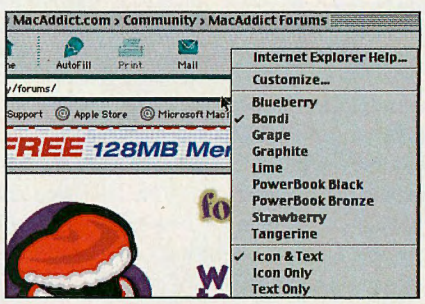
Find Internet Explorer 5 on The Disc.

INTERFACE SPEEDUPS

1 The Button Bar

You can rearrange your button bar (the line of buttons at the top of the IE window) by Command-dragging the buttons where you want them. If you want to delete a button entirely, just drag it to the Trash.

But that's not the end of the available customization options. To get started, Control-click anywhere in the bar. From the pop-up menu, you can set the color scheme, delete a button, or switch between icons and text. You can also select Customize to add other buttons that launch Sherlock, enlarge and shrink all the fonts, add the current page to the Scrapbook, and display the page's HTML source code.



Control-click the button bar to bring up this contextual menu—it lets you customize to your heart's content.

The Map to the Features

Microsoft has riddled the simple-looking Internet Explorer interface with a host of hidden tricks to speed up your browsing. Here's where you can find some of the best techniques.

Here's your treasure map for the Internet Explorer interface.

2 Other Paths

If you Command-click any window's title bar, a complete list of all the directories that enclose the page you're looking at will appear. For example, if you're visiting www.macaddict.com/community/forums, clicking the title bar will give you quick access to the community page and the site's home page.

Just as you would do in the Finder, Command-click the title bar to visit the enclosing sites.

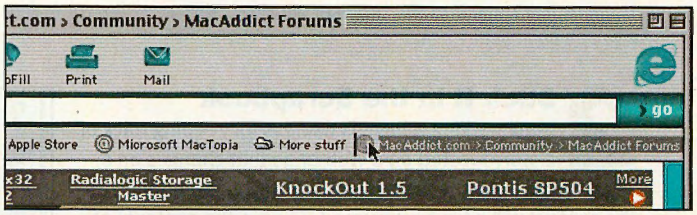
3 Recent Sites

If you click and hold the Back button, a list of the sites you've recently visited will appear. Moreover, if you've repeatedly clicked the Back button, you can click and hold down the Forward button to get a menu showing all the pages between the current page and the one where you started clicking Back.

If you'd rather not get your finger exercise by repeatedly clicking Back or Forward, hold down the mouse button for a rapid-transit menu.

4 Drag the @

The @ (at-sign) next to the URL in the Address bar isn't there for decoration—it's called a Temporary Favorite, and represents the full URL. Drag the symbol into another application to paste in the URL, or drag it to the desktop to create a shortcut to that Web page. You can also drag it to the Favorites Bar to create a button that'll take you directly to the URL or to one of the side tabs to save the current page in the Scrapbook, Page Holder, or Favorites. In OS X, you can also drag @ symbols to the Dock.



You can use the @ to stick the URL on the desktop, in the Favorites window, and in other documents—it's a very useful little symbol.

5 Hide It All

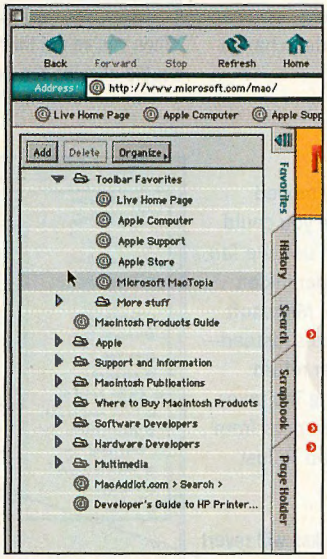
This unassuming little arrow replaces the entire navigation interface with a secondary one that will appeal to fans of minimalism, as well as anyone who has a monitor that can't display 1024 by 768.

If you're stuck with a 640 by 480 or 800 by 600 screen, click the arrows. You can't afford the real estate for all those bars, palettes, and doohickeys.

6 The Favorites Bar

Many Explorer users ignore the Favorites bar, finding it little more than an occasional nuisance when they inadvertently click it. While basic maintenance is quite simple (drag @ icons to the bar to add them, to the Trash to remove them, and so on), you can do a lot more with this feature.

For serious fiddling with the Favorites bar, click the Favorites tab at the left side of the window to reveal the pane listing all your favorite sites. Look for the Toolbar Favorites folder, which contains the items that appear in the Favorites bar. You can add folders to the bar by choosing New Folder from the Organize submenu at the top of the panel. A folder in the Favorites bar becomes a pop-up menu—so you can make a fully hierarchical Favorites bar.



Here they are—your beloved sites, all ready for organization.

Useful (or at Least Random) Keyboard Shortcuts

Sometime over the last 20 years, Microsoft developed the odd habit of giving just about every key combination a function—be it useful, useless, or simply bizarre. Here are some of our favorites.

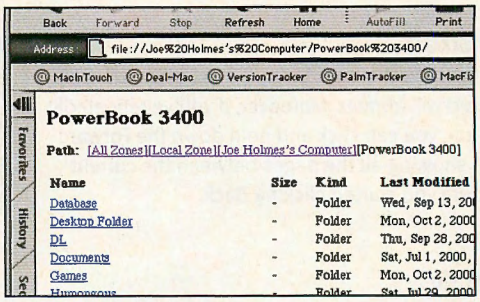
- ⌘ + L — Selects all text in the Address bar.
- control + → — Adds "http://www." to an empty Address bar.
- ⌘ + ' — Fills out forms in Web pages (with contents you determine in Forms Auto-Fill Preferences).
- esc — Removes Auto-fill info from Web forms.
- ⌘ + ` — Cycles through all open windows.
- ⌘ + T — Shows or hides Explorer Bar.
- ⌘ + B — Collapses or reveals all toolbars.
- ⌘ + [— Back. ⌘ +] — Forward.
- delete — Back. shift + delete — Forward.
- ⌘ + ← — Back. ⌘ + → — Forward.
- ⌘ + ↑ — Top of page.
- ⌘ + ↓ — Bottom of page.

MORE IE ODDITIES

Beyond simple interface tricks, Internet Explorer sports some strange and useful features you might never encounter in the course of your daily browsing. Learn these features well—you never know when they might suddenly come in handy.

1 Browse the Hard Drives

Type `file://*` in Internet Explorer's Address bar and—much as in Windows 98—you'll get a hierarchical view of your local and networked volumes. Treat these as hyperlinks—click any of them to go into the volume or folder they represent. If you come across a HTML file, Internet Explorer will display the file properly, of course. This trick can come in handy if someone gives you a heap o' documentation in HTML format—it's a lot easier to simply browse to the various documentation pages than drag them individually into the browser window.



Granted, it's ugly—but when you have to look through piles of HTML, this hierarchical view can be a godsend.

2 Stick It in the Scrapbook

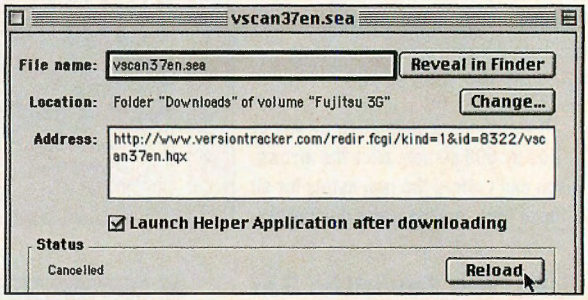
Bookmarking a page is useless for keeping track of a story located on a Web page that changes on a regular basis—by the time you return to your bookmark, all the content will have transformed. To save the contents of news sites, auctions, and bulletin boards, use the Scrapbook, which saves copies that won't change over time. To copy a page into the Scrapbook, first click the Scrapbook tab, then click the Add button. If you're in a hurry, you can just drag the Temporary Favorite (the @ next to the URL in the Address bar) to the Scrapbook tab.

When you just know you'll always want that particular story from *The Onion*—or, better yet, from *our* Web site—saving it in the Scrapbook is the way to go.

3 Download Manager Fun

When you're dealing with a less-than-reliable site (the kind that appears to be field-testing the networking capabilities of chewing-gum wrappers) you frequently encounter interrupted downloads. If your download abruptly halts, double-click the file's icon in the Download Manager window. In the dialog box that appears, click the Reload button. If you're lucky and you had a big enough browser cache to hold the partially downloaded file, the download will resume where it left off.

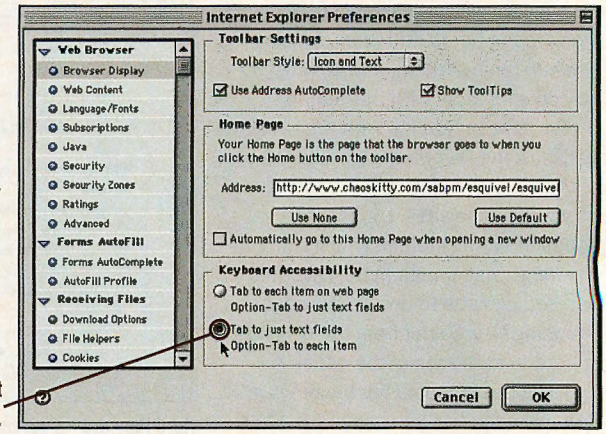
While resuming downloads is certainly the single most useful feature available in the Download Manager, it's only the tip of the iceberg—you can also rename files as they download, open file folders in the Finder, change the download folder, or even copy a file's URL.



When you've got those "It quit with only half a meg to go" blues, double-clicking the Download Manager might cheer you up.

4 Text-Box Tabbing

In the previous version of Internet Explorer, the Tab key moved through all text boxes (the places on a Web page where you could enter text) on the current page. In version 5.0, however, you can use the Tab key to select hyperlinks one at a time, cycling through every hyperlink on your page. Since that's almost never what you really want to do, Microsoft kindly makes it easy to cycle through the current page's text boxes instead—just hold down the Option key while pressing Tab. If you'd rather return permanently to the traditional Mac OS behavior—where pressing Tab takes you between text fields instead of between links—choose Preferences from the Edit menu, click the Browser Display button, and click the Tab To Just Text Fields radio button.



When you click this radio button, the Tab key will revert to the usual Mac OS behavior—it'll skip between text fields, not links.

Joseph Holmes's quest to outlast David Reynolds on the masthead just suffered a setback. Stay tuned.

Great *Galloping* Rhinos!

A Drag & Drop Utility for CD-RW that Actually Works!

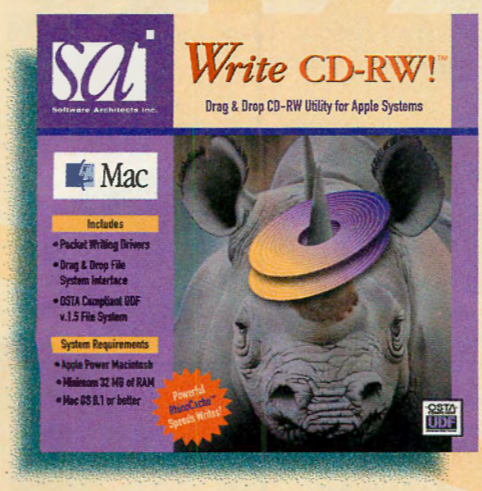
Announcing WriteCD-RW!™ for Apple™ PowerMac and iMac systems.

Now you can reliably mount, drag & drop files to, and exchange disks with PC's using CD-RW disks... fast and easy, every time!

Easy to use: Simply "drag & drop" files to the WriteCD-RW! icon. No time consuming mastering applications needed!

Fast file copies: Our RhinoCache™ hard disk cache speeds file copies and frees up your Mac fast. Files are written to disk in the background, so you don't have to wait. RhinoCache™ eliminates "hot spots" on your disk to extend media life too.

Compatible with the rest of the world: using our exclusive "Red Rhino" UDF file system technology, WriteCD-RW! formatted disks are readable on MS Windows systems running Win Me or 2000, as well as any Apple system running Mac OS 8 & 9, without any additional software required! Disk interchange was never easier!



Supports old legacy disks: WriteCD-RW! even reads & writes to disks formatted with Adaptec's Direct CD™, Toast™ and Easy CD Creator™. Unlike competitive offerings, WriteCD-RW! reliably supports disk interchange between Mac OS and Windows systems using UDF file system readers. No more hassles. It just works!

Affordable: WriteCD-RW! costs only $49.95. To order, contact us at: www.softarch.com, or call 1-800-863-9297.

OSTA COMPLIANT UDF Universal Disk Format

SA Software Architects Inc.

Make Excel Charts That Don't Suck

by Ian Sammis

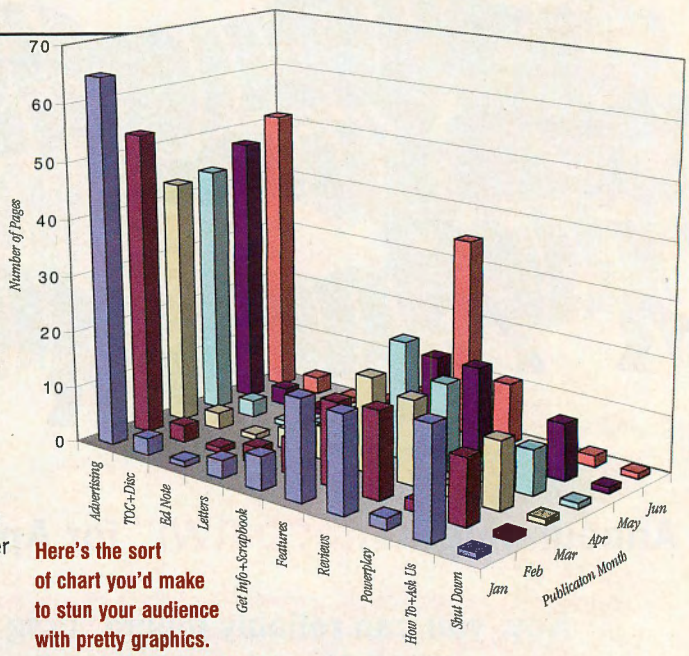
TRICKY

WHAT YOU'LL NEED

- Microsoft Excel 2001
- Data that needs plotting
- Loose morals (optional)

If you work with numbers, it's a better than even bet that at one point or another you've been called upon to make a chart. A chart is an odd sort of beast—as an artistic representation of a set of numbers, a good chart can convey a message with accuracy, whether it be "Taxes are too high" or (as is the case with the vast majority of charts) "We need more money!". Considering that people with good charts often seem to acquire large sums of money, it's worth putting a bit of effort into chart creation.

Unfortunately, many charts develop minds of their own, and may interrupt your presentation with quite a different message: "This jerk used Excel to make me! Badly! I'm embarrassed to even appear! Hide me!" Combined with the PowerPoint-induced doze (a topic for another time), this tendency can be deadly. To save you from that sort of embarrassment, we thought we'd give you the basics of designing charts so that, at the very least, you won't want to get them off the screen fast, before anyone gets a close look (or falls asleep).



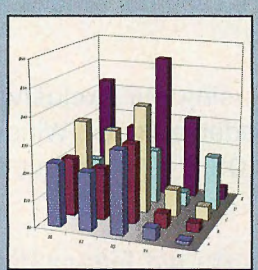
Here's the sort of chart you'd make to stun your audience with pretty graphics. It's lovely, but very difficult to read.

CHARTS BY IAN SAMMIS

What Are All These Chart Types For?

Although Excel sports more than 50 types of charts, they fall into a few broad categories. The type of chart you use will determine what parts of your data you highlight and hide, so you should put some thought into it. Here are the basic types.

BAR CHART

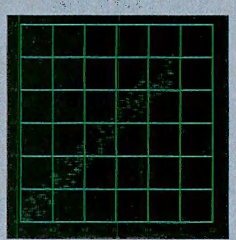


SUBTYPES: Bar chart, column chart, stock chart, cylinder chart, cone chart, pyramid chart.

GOOD USES: Bar charts let you plot small amounts of data clearly and accurately.

EVIL USES: If you're feeling truly evil, use a 3D bar chart viewed from a perspective that makes it impossible to compare anything in it.

SCATTER CHART

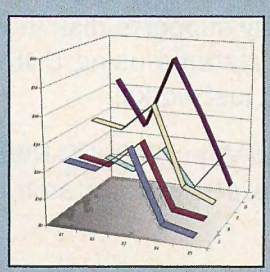


SUBTYPES: Scatter chart, radar chart, bubble chart.

GOOD USES: When used by the moral, a scatter chart is an accurate representation of a set of data. Scientists and engineers are the main users of these plots.

EVIL USES: When used by the amoral, scatter charts can turn a trend into a confusing snowstorm of data.

LINE CHART

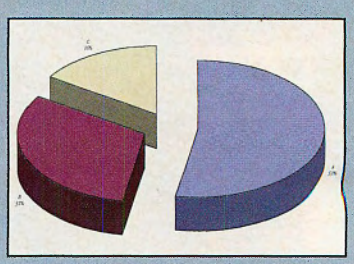


SUBTYPES: Line chart, area chart, surface chart.

GOOD USES: If you've got a lot of data, a line chart makes trends immediately obvious.

EVIL USES: If you don't have much data, a line chart creates a trend out of whole cloth. If your data varies quite a bit from point to point, a line chart can also turn an obvious long-term trend into a confusing squiggle—this can come in quite handy if the long-term trend isn't in the direction you'd like!

PIE CHART



SUBTYPES: Pie chart, doughnut chart.

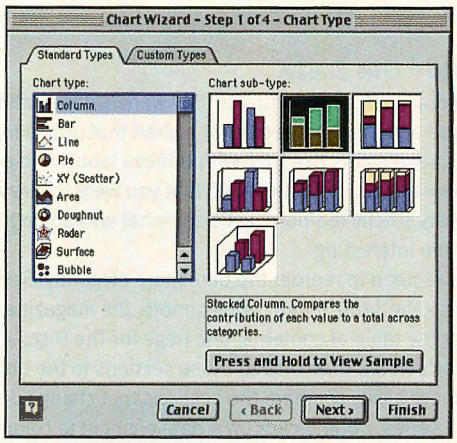
GOOD USES: A pie chart is an extremely accurate way to represent the relative sizes of different parts of a whole (for example, the results of a political poll).

EVIL USES: Plotting repeated pie charts lets you appear to present a lot of data without revealing overall trends—useful if the overall trends aren't so good.

1 Choose Your Graph Type

Once you've typed the data you want to plot into an Excel spreadsheet, select it and choose Chart from the Insert menu. You'll see a list of chart types. Choosing the right chart type for your data is the single most important part of the process, so don't blindly click Line on the basis that your fourth-grade teacher really liked line charts (if you need some tips, see the sidebar, "What Are All These Chart Types For?", p78). Once you've chosen a type you're comfortable with, click Next.

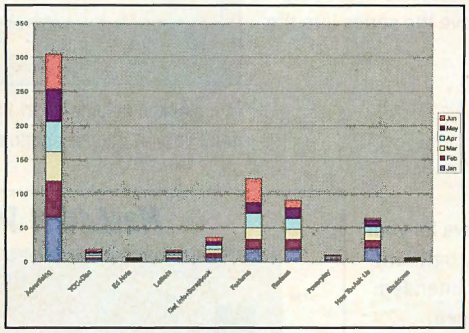
In our example case, we're plotting how we allotted the pages in six issues of *MacAddict*. Since we want to show both the breakdown and the total number of pages, we shouldn't use a pie chart, as a pie chart would hide the total issue size. That leaves us with a choice between a line-type chart (Lines or Area) that will connect the values for each month with smooth lines, or a column-type chart (Bar, Column, Cylinder, Cone, or Pyramid) that will plot each month separately. Since we're only looking at six issues, we chose a Stacked Column chart—a line chart would make what happened in each issue less clear.



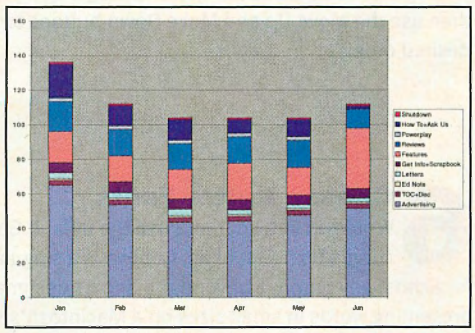
Stacked columns show parts of a whole and the total at the same time, so it's a good choice for plotting the page breakdown of six issues of *MacAddict*.

2 Check the Orientation

Excel will take its best guess as to the orientation of your data—for a bar chart, for example, it will assume you want to use the column headers for axis titles. If Excel gets this wrong (if, for example, you actually wanted the row headers as the titles), this is the place to fix it—just click Columns to reverse the chart. Once you've oriented your chart properly, click Next.



This is a pretty useless plot—you don't want to see the total number of *Get Info* pages over six months!



Ah, that's better—now each column breaks down a single issue.

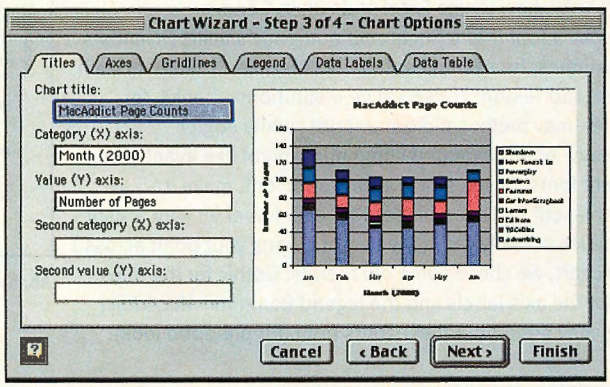
3 Label Your Axes and Chart, and Fine-tune Other Options

You now have an opportunity to change some of the basic settings for your chart. Before you do anything else, take an opportunity to label your chart's axis and to provide a title. There's nothing more irritating than an unlabeled chart—without labels, it's simply a meaningless graphic.

The other options allow you to provide more information with your chart. The Gridlines tab lets you display more or fewer of the lines that extend from the axes across the chart. Turn on extra grid lines only if you have a large amount of data or want to create a grid effect.

The Legend tab lets you set the placement of the chart's legend. If a legend is necessary, see if you can place it in a corner (if it's small enough) or to the right (if it isn't); if you're creating a simple line graph, you might do better to add labels by some other means.

The next two tabs let you attach additional information to your chart. Data Labels can add much-needed information to a simple chart that might otherwise look sparse, while a Data Table serves the same purpose for more-complicated charts. (Unless you've only got two or three categories, use a Data Table for bar charts—otherwise your chart will look like someone was scribbling on it.)

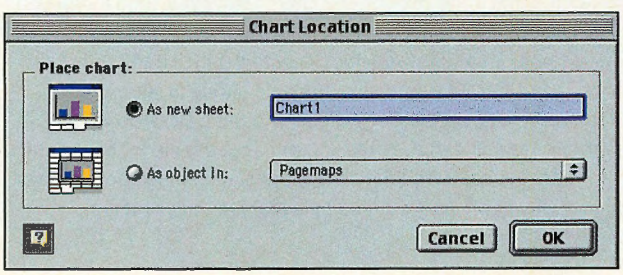


Label your axes, unless you're just trying to create abstract art.

Once you've set all the necessary details, click the Next button.

4 Position Your Chart

If you're creating a spreadsheet for a presentation, you should plot the chart as an element in the spreadsheet itself—it'll become one more layout item for the page. If, on the other hand, the spreadsheet is a working document that you don't want to show anyone, then create the chart as a new sheet so you can edit it separately. Once you've figured out where it belongs, click the Finish button.



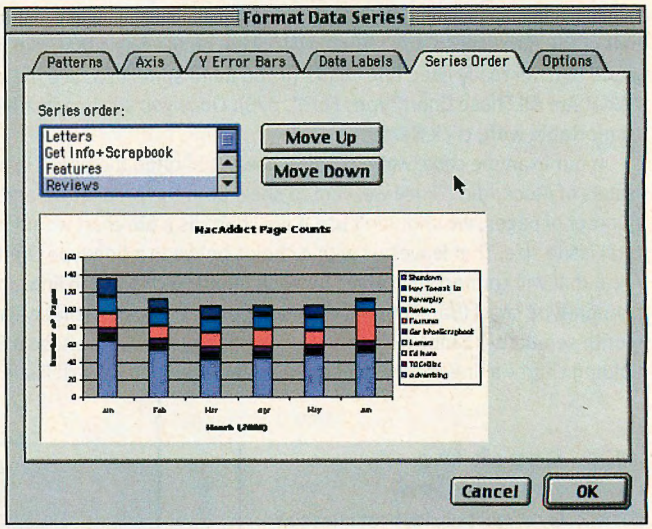
If you're laying out a beautiful spreadsheet, put the chart into the sheet itself; otherwise create a new sheet.

5 Reorder the Data

Many people take an unfortunate "My work is done" attitude at this point—a guaranteed recipe for a chart that puts people to sleep. Everyone's seen charts like this, with Geneva labels and a gray background—these announce to the world that you were too lazy to do any more work than was strictly required. Let's see what we can do to make this chart a bit more interesting.

To start with, we need to reorder the data more elegantly. Several of the sections are always the same length (for example, the magazine always has two pages for the table of contents, one page for The Disc, and one page for the *Editor's Note*). If we moved those sections to the bottom of the chart, we could more easily compare the sections that change dramatically.

To reorder the series, double-click on a data element (a column, bar, point, line, or whatever you chose back in step one to represent your data). This opens the Format Data Series dialog box. Click the Series Order tab, then use the Move Up and Move Down buttons to move the series into the desired order.

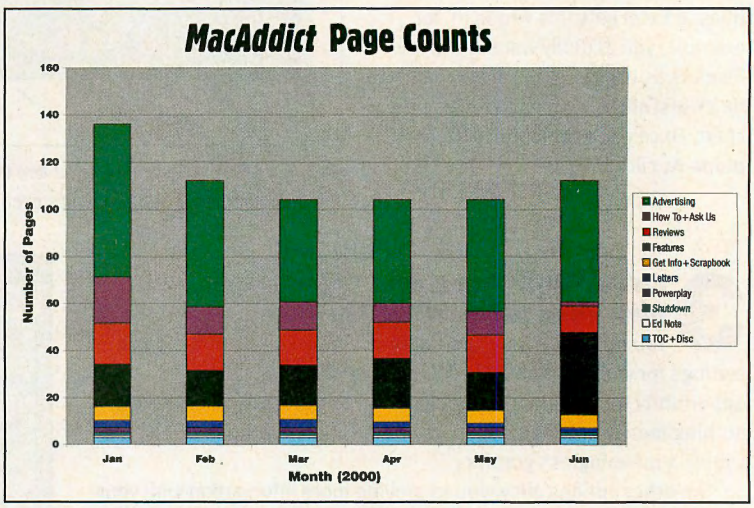


In a stacked column chart like this one, you want to put the pieces that don't vary at the very bottom of the chart.

6 Choose Better Fonts

Whatever you do, don't use the default Geneva for your chart's text. First of all, Geneva is a singularly ugly font for almost any purpose beyond the one its designers intended: presenting words in small sizes on a Macintosh's screen. Second, Geneva isn't too stylin'—it's patterned after Helvetica, which hasn't been a happening font since bell bottoms went out of fashion. Worst of all, every chart by every bozo that doesn't know how to use Excel ends up in Geneva.

Choose a font that reflects your audience's taste. Scientists and engineers, for example, often like tried-and-true fonts such as Times and Tekton; conservative institutions—banks, for example—may prefer solid Garamonds; while edgier technology- or arts-oriented companies might like avant-garde sans serif fonts. (If you go for a sans-serif font, make it big—sans-serif fonts can be hard to read. Never let your artistic sensibilities actually get in the way of getting your point across!) For our chart, we chose some old friends: Gothic for the titles, Swiss for the axis labels and the legend (longtime *MacAddict* readers may remember these fonts from our pre-2000 look).

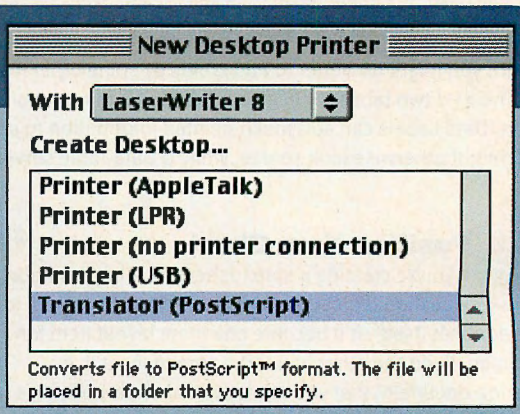


Ah, Swiss and Gothic—I remember the days...

Post Production

If you're an artist or designer, then Excel alone probably won't be adequate for your needs. Still, starting a chart in Excel is usually quite a bit easier than trying to build one from scratch in a full-fledged graphics program. Fortunately, there's a way to do a bit of finishing work on the chart before you send it off—you can move it into Photoshop or Illustrator.

When you start, it's not immediately obvious how to get the chart out of Excel with any real quality. The secret (like so many others) is hiding in your Apple Extras folder. Go into Apple LaserWriter Software, and run the Desktop Printer Utility. Create a Translator to Postscript. When you print out the file to that printer, you'll instead be printing to a Postscript file, which you can open in Photoshop or Illustrator. Now you can finish off your chart using a real graphics program, instead of being limited to Excel.



A Translator looks and acts much like a real printer, except that it creates PostScript files instead of physical prints.

MacAddict

JANUARY/99

You Can Order Back Issues By Calling

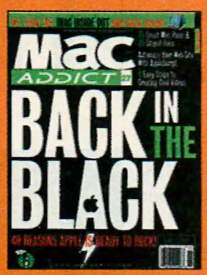
1-800-865-7240

Mon-Fri, 7am-11pm CST
Please have your credit card ready.

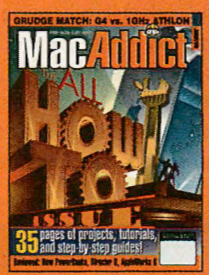
Back issues are available on a limited basis.

APRIL/00

MARCH/00



NOVEMBER/98



JUNE/00

MARCH/99

FEBRUARY/00

You Can Also Order By Mail By Writing To Us At :

MacAddict Customer Service • Imagine Media, Inc.
150 North Hill Dr. • Brisbane, CA 94005

Please send check or money order and specify which issue you would like to order.

Inside the U.S. please send: $9.95 for magazine and CD-ROM; $7.95 for magazine only. Outside the U.S. please send: $12 for magazine and CD-ROM; $10 for magazine only. U.S. prepaid funds only.

5G9S7

Macworld Conference & Expo ahead

When you register online, refer to Priority Code: **A-ADTH**

Flagship Sponsors
Macworld MacCentral.com MacWEEK.com Macworld.com

Moscone Convention Center
San Francisco, CA
January 9 – 12, 2001

Register Online Today!
www.macworldexpo.com
Call Toll Free 1.800.645.EXPO

Macworld Conference & Expo is moving ahead with knowledge and technology!

World-Class Exposition!
A One-Stop-Shop to over 500 companies and a multitude of innovative products and services!

Show Highlights
- Insightful Keynote Address by Steve Jobs, CEO of Apple
- Feature Presentations by industry leaders Microsoft Corporation and Macromedia
- Digital Art Gallery
- Internet Café
- Individual Guided Expo Tours
- Music & Audio Showcase
- Macintosh Gaming Area

Special Interest Boulevard — San Francisco Debut!
A showcase of ground-breaking products and technologies from some of the hottest up-and-coming companies in the Mac industry.
- Digital Media
- Small Business
- Sci-Tech
- Education/Assistive Technology
- 3D
- Edutainment

Cutting-Edge Educational Programs
Conference sessions for the New, Beginning, Intermediate and Advanced users!

Macworld/Pro offers the most sophisticated training available on Mac for the advanced users and skilled professionals.

Macworld/Users continues to be one of the best educational values anywhere.

MacBeginnings are high-energy, informative sessions that acquaint you with the Mac community.

Macworld Conference & Expo

Be sure to visit **www.macworldexpo.com** for the most up-to-date information

Owned and Managed by IDG WORLD EXPO

© 2000 IDG World Expo. All rights reserved. All other trademarks contained herein are the property of the respective owners.

7 The Color Scheme

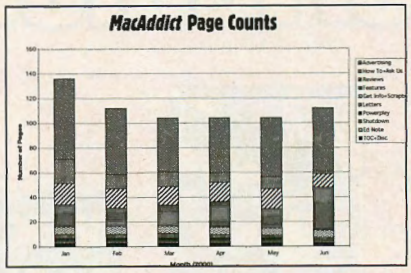
Now it's finally time to choose a color scheme for your chart. The key here is to think about how you will reproduce your chart—lovely color gradients won't help your chart if you're planning to print it out on an old LaserJet, then fax it across the country.

If your chart will end up in black and white, don't design it in color—you'll end up with a bunch of nearly identical grays. Instead, use patterns where you can—they're much more distinguishable than gray tones. Use a white background in black-and-white graphs; without hue differences, it's much too difficult to see a chart against a shaded background.

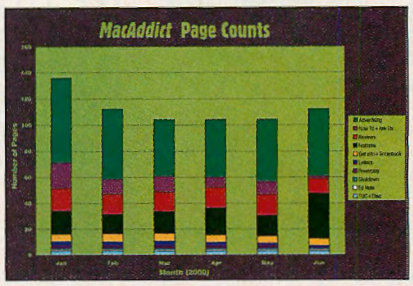
If, on the other hand, you're using color, use it wisely. Choosing colors is your best chance to draw attention to those parts of the graph you consider interesting (if you think the whole chart's pretty boring, a nice background image might cheer your audience up).

To set the color of a chart element, double-click the element, then click the Patterns tab. If you want a single-color background, select it; otherwise, click the Fill Effects button. This opens the Fill Effects dialog box, where you can choose a pattern, repeating texture, gradient, or picture as the fill element. If you use a picture, pick one that doesn't render the text unreadable—a vibrant, saturated picture may be pretty, but will make it almost impossible to see the axis labels.

That's it! You should now have a chart that shows your data in its best light.



This design might look like a refugee from the mid-1980s, but if you're going to print in black *and white*, you should design in black and white.



With those fonts, we couldn't resist mixing green and purple for the final look of our chart. Remember, if your printer can't handle colors, a multihued chart will look like mud when it prints.

Ian Sammis is running behind, as always. Would you believe he typed this bio in Quark on the day it was supposed to ship?

Stretching the Truth

Usually, people use charts to present data as accurately as possible. When things go bad, though, accurate charts can get a bit embarrassing. Fortunately, you can use some tricks to make your chart look a bit more palatable—and you're only failing to reveal the truth, not actually lying. Repeat that phrase to yourself in case you need it under oath.

Choose Your Axes Carefully

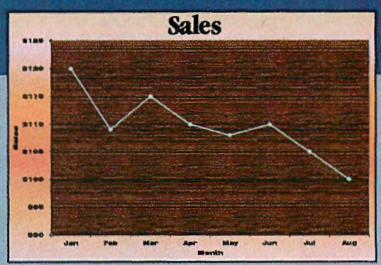
If you'd like a trend to look a bit more dramatic than it deserves to look, set the scale of the y-axis so the data starts right near the bottom of the chart and ends up near (or, better yet, slightly past) the top. This can make even the most trivial of upward trends look like a dramatic surge. On the other hand, sometimes trends are simply going in the wrong direction. In these cases, make the y-axis stretch over as big a range as you can plausibly use. The bigger the range of the y-axis, the less dramatic any trend will look—and "Profits are flat" sounds much, much better than "Profits are down."

Use Pie Charts to Avoid Revealing Trends

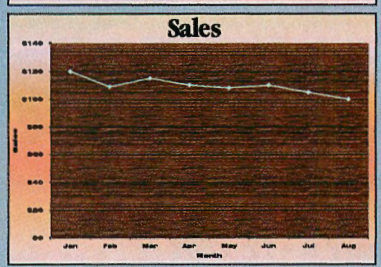
A pie chart has one serious benefit: It hides the total of the data you're graphing. If you're a pollster using your powers for evil instead of good, for example, a pie chart will very accurately show what fractions of your sample supported or opposed each of your poll questions without forcing you to admit that you only polled 12 people. If you plot repeated pie charts, you can use this trick to disguise negative overall trends (after all, you can plot six pie charts of sales without admitting that sales are down).

Use Area Charts to Focus on Favorable Results

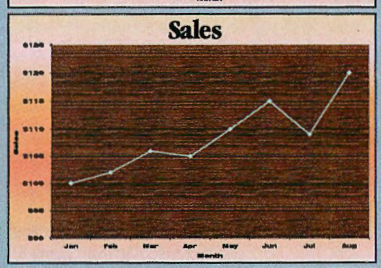
Area charts have an endearing property—the frontmost data set obscures everything plotted behind it. Used cleverly, an area chart lets you quietly hide the bad news by shoving it behind the good.



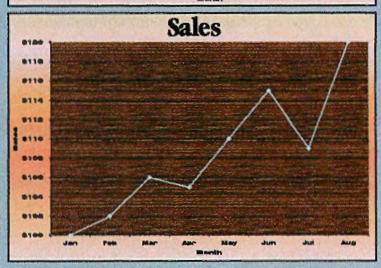
If you know how to use charts, you can make bad news...



...less depressing...



...or good news...



...great news. Best of all, you're not lying! Well, not exactly...

Your friends at

met@box®

proudly present a new line of **REMARKABLE PRODUCTS!**

MET@DRIVE Express

IEEE1394 FireWire® Storage Device

Small Drives for BIG STUFF!

AMAZING! **Fits in your pocket!**

The **METADRIVE** is compact enough to travel with you wherever you go, big enough to store all your stuff, and fast enough to get the job done in record time!

Packed with Exciting Features:

- High capacity hard drive
- Two 6-pin FireWire ports!
- LED power and activity lights!
- Super fast performance
- Two year warranty!

Available in these MONSTROUS capacities!

10 GB WOW! 20 GB AMAZING! 30 GB AWESOME!

Give your Mac a two-fisted punch!

joeCARD

Processor Upgrade Cards

2 MB POWER

Have a faster, stronger more powerful Mac in just minutes!
Don't be **BULLIED** by resource hungry applications. Show 'em who's boss with real processing **MUSCLE!** Take on those power sapping files with a **TWO FISTED PUNCH!**

PRICED TO SELL FAST!

Make your computer work for you!
Metabox has a **joeCARD** just for you! With the **joeCARD, joeCARD T** or the awesome **joeCARD Z** with it's mighty **2MB** cache, we can make your current hardware faster, stronger, more productive!

FREE illustrated booklet included!

DOUBLE YOUR PUNCH with the mighty joeCARD Z 450 G4+ 450 Mhz/2 MB Cache

START YOUR OWN ARMADILLO RANCH!

FUN! EXCITING! FASCINATING! EDUCATIONAL!

THE MOST POPULAR PET IN THE WORLD!

EVERYTHING YOU NEED TO RAISE THESE "LIVING DINOSAURS" IN YOUR OWN HOME FOR FUN AND PROFIT!

These and other fine met@box products are Available at Outpost.com and Other World Computing

We're more than just cool stuff!
In addition to fast, reliable performance and exceptional value you also get unrivaled support from a stable, enduring company. Metabox has received numerous awards from the European magazine community.

To learn more about us please visit us on the web at www.metaboxUSA.com or call us toll-free at 1-800-292-7753.

met@box® www.metaboxUSA.com

Also Available!

MET@DRIVE DESKTOP

IEEE1394 FireWire® Storage Device

75 GIG

JUMBO DESKTOP MODEL

- Massive storage capabilities!
- Connect up to 63 drives!
- No device IDs or termination!

GREAT FOR BACKUP STORAGE & HIGH-SPEED VIDEO CAPTURE!

Seal of Quality

FIND OUT MORE!

Act Now!

See what Metabox can do for you! Check us out on the web at www.metaboxUSA.com or Call toll-free 1-800-292-7753

PLEASE PRINT CLEARLY

Metabox Corporation
701 Brazos, Suite 500
Austin, Texas 78701
1-512-320-9145

© 2000 Metabox Corporation. All rights reserved. Metabox, the Metabox logo, joeCARD, joeCARD Z, joeCARD T and MET@DRIVE are trademarks of the Metabox corporation, registered in the U.S. and other countries. Mac, G-3, G-4 and FireWire are registered trademarks of Apple Computer, Inc.

Make Mac OS X Look and Act Like Mac OS 9

by David Reynolds

TRICKY

WHAT YOU'LL NEED

- Mac OS X Public Beta
- Sig Software's Classic Menu 2.0
- Sig Software's Drop Drawers

Find Sig Software's Classic Menu 2.0 and Drop Drawers X 1.2.6 on The Disc.

ILLUSTRATION BY SHAG

OK, all of you early-adopting Luddites out there who fear Mac OS X because it's...well, different from Mac OS 9—listen up. Have we got a deal for you! We can help you harness the power of Mac OS X without leaving behind all the comforts of the Mac OS 9 user interface. That's right, we'll teach you how to take a heavy hand with Mac OS X and *make* it behave like the classic Mac OS we've all grown to know and love. Best of all, this transformation requires almost no effort: It's mostly a matter of tweaking Mac OS X's preferences and running a bit of shareware.

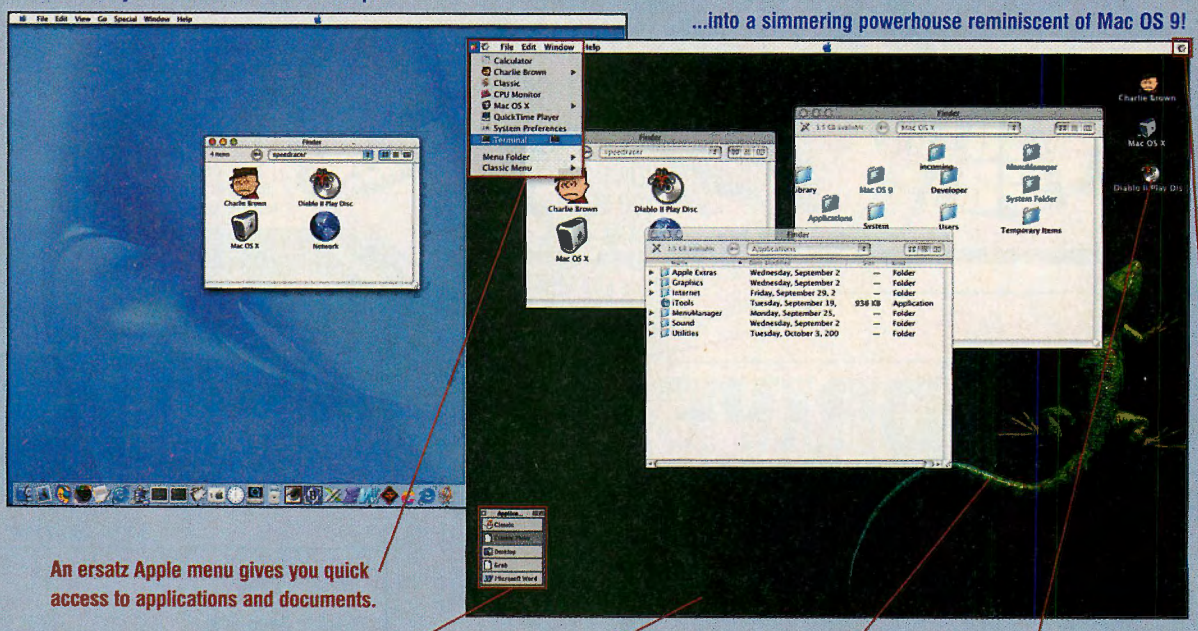
If after reading our little tutorial you decide that Mac OS X needs to move further toward Mac OS 9 in form and function, tell Apple how you feel at www.apple.com/macosx. The company is listening to every bit of feedback, so it's in your best interest to hop on over there and tell Apple what you think in as much detail as possible. Do let Apple know about the good stuff, too. It's always nice to know what you're doing right.

How We're Getting There

By making a lot of changes that, taken individually, seem trivial, you can go from a totally foreign OS X experience to one that strongly resembles OS 9. Here's how.

You can turn your basic Mac OS X desktop...

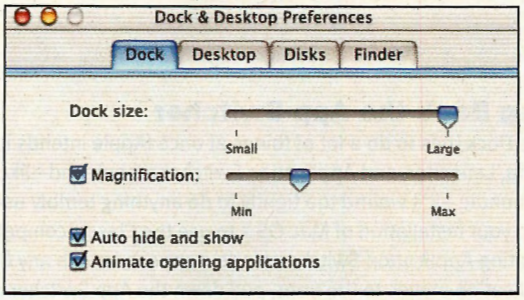
...into a simmering powerhouse reminiscent of Mac OS 9!



1 Doing the Dock

First things first: The most obtrusive thing in Mac OS X is the Dock—it eats up a huge chunk of screen real estate. We can fix that by hiding the Dock until we need it. (We don't want to get rid of the Dock entirely, because it tries so hard to make itself essential by acting as the Application Switcher, Control Strip, and Apple Menu all in one.)

To make the Dock slide out of the way when you're not using it, open its preferences window by choosing Dock & Desktop Preferences from the Desktop menu, then clicking the Dock tab. Check the Auto Hide And Show box and close the window. Now the Dock gracefully disappears when it's not active. To make the Dock reappear, just move the cursor to the bottom of your screen. This is great when you're dealing with an application that puts the lower edges of its windows *under* the Dock, making them impossible to resize. No Dock, no problem.

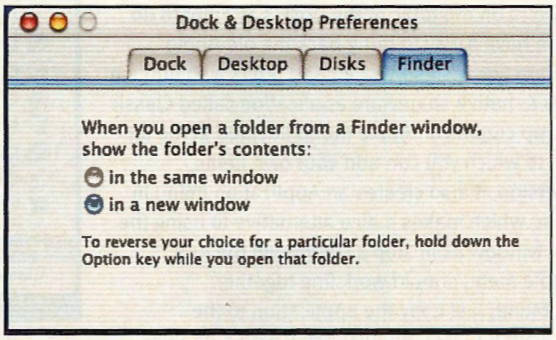


Select the Auto Hide And Show check box, and the Dock will move out of the way when you're not using it. If you don't want to lose the Dock entirely, you can opt to make it really teeny—that will have almost the same effect.

2 Fixing Finder Windows

The higher-ups at Apple apparently don't like clutter, so Mac OS X displays the contents of an opened folder in the frontmost window, instead of creating a new window as Mac OS 9 does. This can be disconcerting for OS 9 users, who are accustomed to seeing each open folder or volume in its own window.

To make Mac OS X behave more like Mac OS 9, open the Finder's preferences window (by choosing Dock & Desktop from the Desktop menu, then clicking the Finder tab). Select the In A New Window radio button to make the Desktop application create a new Finder window when you double-click a folder.



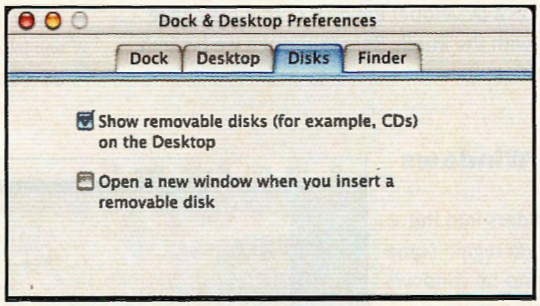
With the click of a radio button, you can cow Mac OS X into acting like Mac OS 9 when it comes to opening new Finder windows.

3 Making a Familiar Desktop

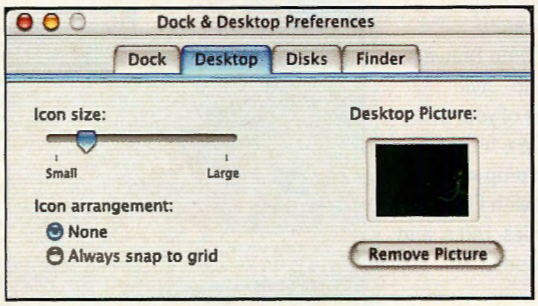
X is starting to look and act more like Mac OS 9, but we still have some serious work to do—namely, populating that barren desktop with some icons. First we'll put icons for our Mac's hard drives on the desktop. To do this, open a Mac OS X Finder window, navigate to the root level of the Mac, and drag onto the desktop any volumes you want to appear there. OS X will make an alias to each item—for most purposes, aliases under OS X act as hard drive icons do under OS 9.

We're only halfway done; we still need to get our CDs to show up on the desktop. To make *this* happen, choose Dock & Desktop Preferences from the Desktop menu (again), click the Disks tab, and check Show Removable Disks (For Example, CDs) On The Desktop. Close the window. Now, every time you insert a CD, it will appear on the desktop.

Since you're working on the desktop, you might want to replace the Aqua background with a more interesting view. Click the Desktop tab in the Dock & Desktop Preferences window, then choose a new picture by clicking the button in the lower-right corner (below the thumbnail of the current desktop image).



Check this box, and removable disks will show up on the desktop as they should.



By placing a new image (any old JPEG or TIFF will do) in the Desktop Picture portion of this preferences panel, you'll take one more step toward making Mac OS X your very own.

The Changing Face of OS X

This how-to will work for Mac OS X Public Beta, but we can't guarantee that things will be the same in the final version. Apple is very keen on hearing what you want to see changed in Mac OS X, so some of these issues may become irrelevant.

Another factor to keep an eye on is the rapid pace of shareware development around Mac OS X. By the time you read this, it's pretty likely that new user-interface enhancements for X will be out, so keep an eye on our MacAddict.com Super Site (www.macaddict.com/macosx) or on VersionTracker (www.versiontracker.com) for announcements of new titles.

4 Bringing Back the App Switcher

Mac OS X's Dock tries to do a lot of things at once (Apple intends it to replace the Apple Menu, Control Strip, Launcher, and Application Switcher menu), and—like a rubber band stretched around too large a bundle—it's wound too tightly to do anything terribly useful. You can remedy this, provided you set up your installation of Mac OS X to use the Classic compatibility environment.

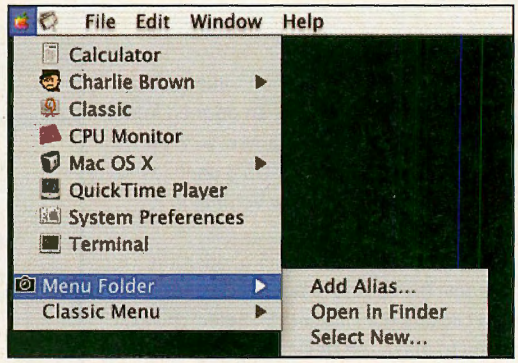
To make the floating Application Switcher window appear, launch any Classic app. Once everything loads and that application moves to the front, pull down the App Switcher menu in the upper-right corner of the screen and tear off that menu. It will turn into a floating window that lists all of the apps running on Mac OS X, whether they're Classic, Carbon, or Cocoa. Although OS X applications will appear with generic document icons, the window works just as it would under Mac OS 9.

Remember this floating window from Mac OS 9? You can have it in Mac OS X, too.

5 Adding the Right Menus

As long as we're on the topic of the Dock's attempt to do too much, we have a way to bring back the old Apple menu, too. Sig Software (www.sigsoftware.com) offers a solution in the form of a Mac OS X–native shareware application called Classic Menu 2.0. This $10 app creates an Apple menu (located at the far left of the menu bar) to which you can add your own items, building a custom version. It also creates an Application menu in the upper-right corner, which makes a nice alternative to using the Application Switcher window as in step 4—although the App Switcher and the Apple menu should work fine together.

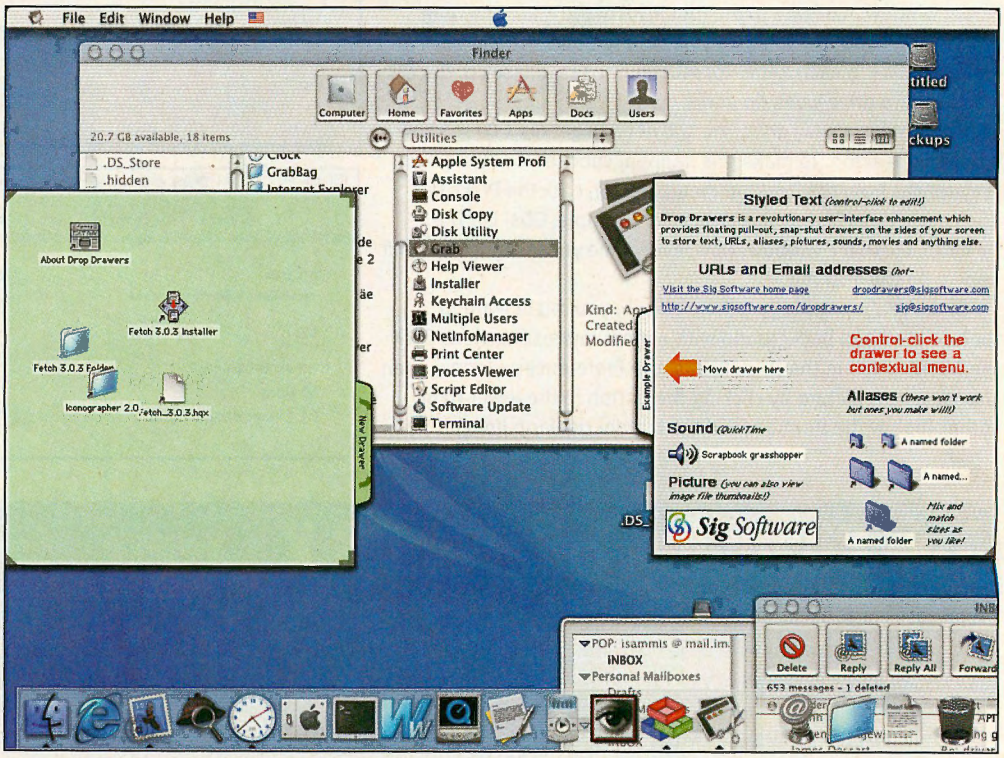
To install Classic Menu, just copy the application to the directory where you want it to live, then launch it with a double-click. Classic Menu 2.0 (the most recent version as of press time) was written for Mac OS X Developer Preview 4, so it may have compatibility issues with the Public Beta (although we haven't experienced any problems).



Yeah, baby—a multihued Apple menu in Mac OS X, provided by Classic Menu 2.0. You can add aliases to your Apple menu that point to your most frequently used applications, volumes, and folders. (The little camera icon is a product of Grab, Mac OS X's screen capture program, not of Classic Menu 2.0.)

6 Pop-Up Windows Redux

If you put folders into the Dock, they kinda, sorta regain some of the functionality pop-up windows once had—but there's a much better way. Sig Software's shareware program Drop Drawers lets you attach pop-up–style drawers to the edges of your screen. The drawers are quite a bit more versatile than the pop-up windows they replace—along with files, they can store text, graphics, URLs, and multimedia applications.



The drawers in Sig's Drop Drawers are like pop-up windows with superpowers.

David Reynolds still can't believe how big 128-bit icons are, despite having been stepped on by one.

The Classic Game of World Domination!

RISK™ II

It is the time of empires and armies, of countries and conquests. The world is at war and you are in command of an army fighting for global domination. Organize your forces in a ruthless campaign to crush your enemies and take their territories in this fast-paced game of strategy, negotiation and luck.

EVERYONE E CONTENT RATED BY ESRB

Mac

HASBRO Interactive

INFOGRAMES

"...virtually any family member can enjoy the game, it's a must have for strategy fans, and action fans would find it hard to resist Risk II's addictive gameplay."
— Mac Central —

MacSoft®

www.wizardworks.com/macsoft/

©2000 Hasbro, Inc. ©2000 Hasbro Interactive, Inc. All rights reserved. MicroProse is a trademark of Hasbro. Published and distributed by Infogrames, Inc. under its MacSoft label. All trademarks and registered trademarks are the property of their respective owners.

ask us

Enough answers to stump Alex Trebek.

Questions?

Submit technical questions or helpful tips directly via email (askus@macaddict.com) or c/o ***MacAddict*, 150 North Hill Dr., Brisbane, CA 94005.**

Find Keychain AutoUnlock and Keychain Unlocker on The Disc.

Q I bought a new iMac, which is a wonderful replacement for my aging LC 575, but I have a problem I can't resolve. My computer freezes when I try to put it to sleep. Help me put my computer to sleep—I think it's tired!

A A sleeping Mac is a happy Mac, or at least that's how the old adage goes, isn't it? Wait, that isn't right....Anyway, the Mac's sleep function comes in handy when it works correctly. Instead of turning your Mac off, you can just put it to sleep—waking your Mac when you want to use it again is significantly quicker than the rigmarole of a full startup.

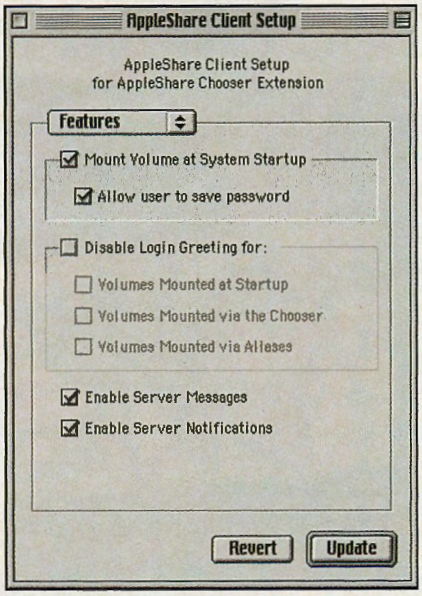
Unfortunately, the problem you are experiencing with your iMac is fairly common. The culprit is the USB bus. Due to the USB implementation Apple uses for iMacs, some third-party USB devices can cause sleeping disorders. Since USB hubs are a common element in these problems, you can often remedy this behavior by either changing USB hubs or connecting an offending device directly to your iMac. There is no good explanation for why some devices cause sleep problems and others don't. Try troubleshooting your USB devices: Unplug them all, then reattach them, starting with just the Apple mouse and keyboard and connecting other devices to your computer, one by one, until the problem returns.

If your computer refuses to sleep with only the Apple mouse and keyboard attached, you probably have a software problem. The Apple Audio extension is a common suspect. If USB tinkering fails, try disabling this extension in the Extensions Manager control panel. Whether the root cause is software- or hardware-related, you should be able to identify it fairly easily.

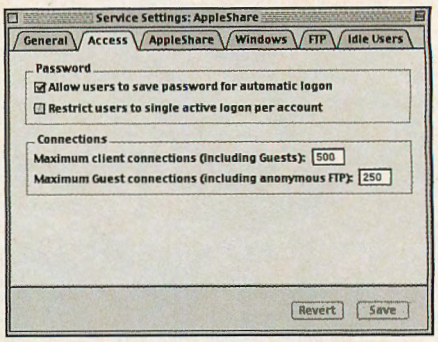
Q We have a network of several Macs. When we start up our OS 9–based Macs, our Mac prompts us for a password to connect to our AppleShare server. Our older Macs allow us to save the password, and the servers mount by themselves. We don't want to have to enter a password to connect to the server at startup. Are our days of automatically connecting to network drives over, or is there a solution?

A Your new computers rely on Apple's Keychain to save AppleShare passwords. This new technology enables you to save all your commonly called-upon passwords in one place and activate all of them simultaneously by typing a single password. When you unlock the Keychain at startup, the application allows you to access any password stored inside. You have to unlock the Keychain before the Save Password feature of the AppleShare extension will work.

If you want to get around typing your Keychain password, you can use software that allows your computer to unlock it automatically. One option is Keychain AutoUnlock (www.chaoticsoftware.com) and another is Keychain Unlocker (www.carnation-software.com). Both of these free utilities enable your system to unlock the Keychain and access the passwords stored inside. As for your AppleShare server, make sure you've enabled password saving in the Mac OS Server Admin application.



Explore all the undocumented features of the AppleShare Chooser extension with the handy little AppleShare Client Setup utility.



Make sure your AppleShare server is configured correctly if you want to save passwords.

Since we're talking about AppleShare and client interaction, we'd like to mention a wonderful little unsupported Apple utility called AppleShare Client Setup (http://asu.info.apple.com/swupdates.nsf/artnum/n10119). This free utility lets you configure the many hidden features of the AppleShare extension. You can also set lots of very cool options, such as AppleTalk timeout length and the size of the Finder's network read/write cache. It is a shame that the Mac's built-in network software doesn't include this wonderful tool, since the adjustable parameters really allow for some great fine-tuning. In the meantime, Mac network administrators should know of this unsupported Apple tool.

Q I had Apple install a DVD-RAM drive in my G3 when I ordered it. Adaptec came out with Toast DVD recently, and I want to create my own DVD-Video disks. Is this possible with a DVD-RAM drive, or do I need something else?

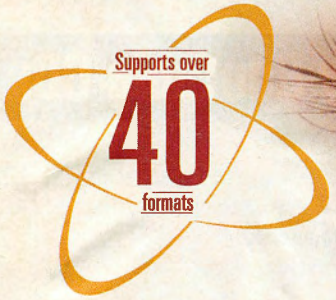
A Creating DVD-Videos that you can play on standard set-top DVD players is not as easy as you might think. DVD-Video technology—still in its infancy—is quite expensive. The players are becoming affordable, but the software and hardware technologies you need to create files haven't come down in price. To top it all off, DVD has lots of different competing standards.

Your DVD-RAM drive has little to do with DVD-Video discs. Think of DVD-RAM as a really big Zip disk that happens to use DVD

Try it before you buy it!

ACDSee™ For Mac

The Perfect Software Solution for Digital Image Management



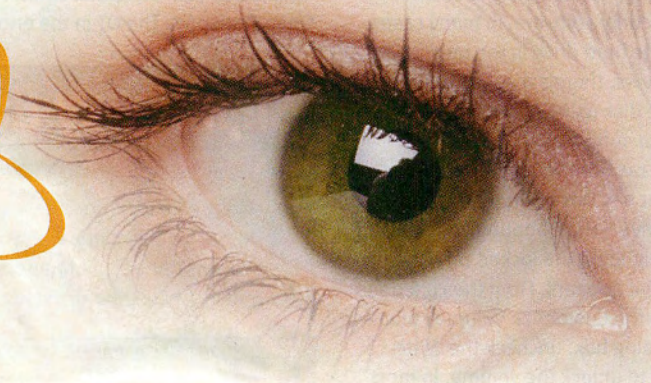


Image viewing at its very best

Visit us at

Macworld
Conference & Expo
January 9-12, 2001 - Hall A Booth 433
Moscone Convention Center, San Francisco, CA

Download ACDSee For Mac trial version at
www.ACDSYSTEMS.com/ma

ACD
www.ACDSYSTEMS.com
PO Box 36, Saanichton, BC, V8M 2C3
T1.800.579.5309 F1.866.544.0291

QuickTime
Mac

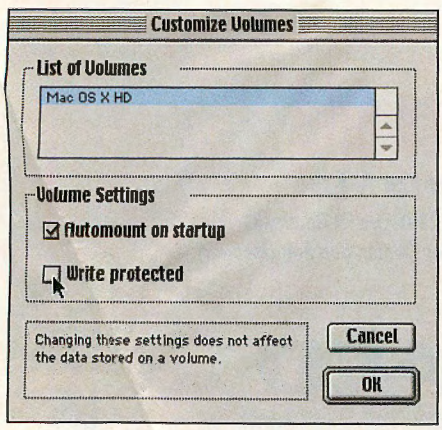
technology to store data. Though you can't use a DVD-RAM drive to actually *create* a DVD-Video disc with Adaptec's Toast DVD (www.adaptec.com), you can use it to *store* a DVD disc imaged created by Toast. You could then take the DVD-RAM disc, which contains the DVD-Video disc image, to a disk duplication service and have a functioning video disc made. But the cost of making a single DVD in this way can be prohibitive.

Currently, the only option for creating a DVD-Video disc at home is Pioneer's DVD-R disc recorder (www.pioneerusa.com). This SCSI device works well with Adaptec's Toast DVD software, but it costs over $4,000. If you really need to create DVD-Video discs, however, it may be your only option. More DVD-Video creation hardware may be available soon.

Q For some reason the hard drive on my computer is locked! I don't know how it happened, but I can't unlock it. I know I could just reinitialize the drive, but I don't have a backup. Is there some way to unlock it?

A A locked hard drive usually results from installing or opening hard disk driver software or security software. In many cases, reinitializing the hard drive is the only solution. However, there's a good chance you can unlock the disc using Apple's Drive Setup hard disk driver software.

To give it a try, boot your computer to a System CD that has Drive Setup on it (most do). Launch Drive Setup, booting your Mac off the CD, then highlight the locked drive in the list of drives that appears. From the Functions menu, choose the Customize Volumes menu item. In the dialog box, uncheck the Write-Protect option to unlock the volume. In most (but not all) cases, this should do the trick.



Use Drive Setup to make sure your drive is not write-protected.

Q I was doing some cleanup in my System Folder, and I may have accidentally deleted a file that's rather crucial for my Internet connection. Whenever I try to connect to the Internet, I get an error that says "OTATalkServicesLib cannot be found," and my Mac can't connect. I looked in the Extensions Manager control panel and couldn't locate this item. What is this and where can I find it?

A One of my favorite aspects of the Mac OS is the way it names everything just as you would expect. In other words, it doesn't have any cryptically named files like those you find all over Windows. Unfortunately, you have run across one of the few instances where this is not true. Lib or library files contain code that adds functionality to your system. In other words, Lib files are extensions. This is where the naming inconsistency shows up: In most cases, these Lib files are not actually files at all, but pieces of code that live inside other extensions. So why don't the error messages say they can't find the *extension?*

If you get the "OTAtalkServicesLib" error, in actuality your computer cannot find part of Open Transport. The OT in the error stands for Open Transport, the technical name for Apple's network software. In your case, enabling all of the Open Transport extensions will probably clear the error. If not, a custom installation of Open Transport should fix the problem. The lesson here is that most Lib errors do not tell you the exact name of the missing file; they only give you a clue as to which extension or control panel your Mac may be missing.

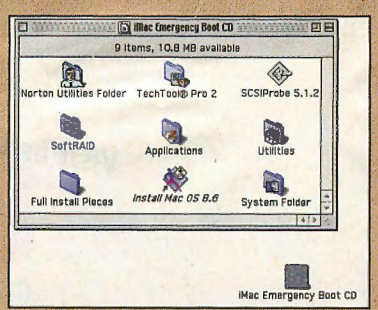
Buz Zoller knows what he's talking about.

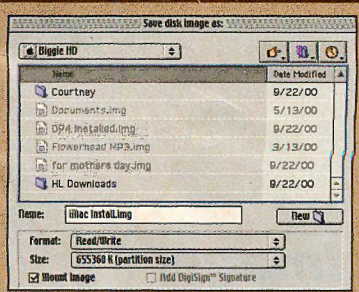
Resourcing

In the September 2000 issue, we explained how to create a custom startup screen for your computer. Due to an editorial error, the article recommended creating a PICT file instead of the necessary PICT Resource file. A standard PICT file (named StartupScreen and placed in the System Folder) will *not* work. What *will* work is a PICT Resource file. You can create this file with Photoshop or Graphic Converter, or by pasting your image into a new PICT Resource in an empty ResEdit document. We apologize for the confusion.

Supereasy Bootable CDs

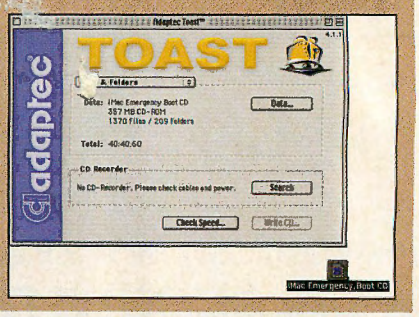
1 Make a Read/Write disk image of the Software Install CD that came with your computer, using Disk Copy (http://asu.info.apple.com/swupdates.nsf/artnum/n11162).





2 Mount the image and add or delete any software you want, making sure to leave at least the System Folder. You might also want a copy of Norton Utilities or TechTool Pro.

3 Drag the mounted disk image into the Toast window. Make sure it's bootable—Toast 4 does this for you, while earlier versions require that you select the Make Bootable check box. You're done!



ADVERTISER INDEX

ADVERTISER	ADDRESS	PHONE NO.	WEBSITE	PAGE
Academic Superstore	111 West Anderson #D207	(800) 294-4035	www.academicsuperstore.com	112
ACD Systems	6703 Rajpur Place	(250) 544-6700	www.acdsystems.com	89
AllMac/We Fix Macs	2202 No. First Street	(800) 933-4962	www.ALLMAC.COM	112
AppleWorks Users Group	P.O. Box 701010	(888) 781-AWUG	www.awug.org	112
APS Technologies	22985 NW Evergreen Parkway	(800) 395-5871	www.apstch.com	96, 97
Aspyr Media	98 San Jacinto Blvd. Ste. 2060	(512) 708-8100	www.aspyr.com	13
Aspyr Media	98 San Jacinto Blvd. Ste. 2060	(512) 708-8100	www.aspyr.com	67
BioMorph Desk	11 Broadway #1010	(888) 302-DESK	www.biomorphdesk.com	113
BitHeadz Inc.	4400 Capitola Road # 202	(888) 870-0070	www.bitheadz.com	119
Brother by MSA	470 Park Ave. South			21
Casady & Greene	22734 Portola Drive	(831) 484-9228	www.soundjam.com	54
Charismac	10000 Hill View Rd	(530) 885-4420	www.charismac.com	52
ClubMac	7 Hammond	(800) 258-2622	www.club-mac.com	99–101
Coast to Coast Memory	174 Willow Street	(800) 4-Memory	www.18004memory.com	114
Compu America	10435 Santa Monica Blvd.	(800) 533-9005	www.compu-america.com	116
ComputerSkins	1841 16th Street NW	(202) 830-5111	www.computerskins.com	112
Connectix	2955 Campus Drive	(650) 571-5100	www.connectix.com	49
Contour Design	354 North Broadway	(800) 462-6678	www.contourdesign.com	115
Data Memory Systems	24 Keewaydin Drive, Unit 5	(800) 662-7466	www.datamem.com	114
Deneba Software	1150 NW 72nd Ave, Penthouse Floor	(800) 6-CANVAS	www.deneba.com	19
Drive Savers	400 Bel Marin Keys Blvd.	(800) 440-1904	www.drivesavers.com	112
Eritech International, Inc.	213 N. Orange Street Unit C	(800) 808-6242	www.eritech.com	114
EZQuest	23311 La Palma Avenue	(714) 694-0031	www.ezq.com	113
FORMAC Electronic, Inc.	140 Town & Coun try Drive	(925) 855-1063	www.formac.com	108
getinspace.com	234 E. Penn Street	(877) 711-HOST	www.getinspace.com	119
Griffin Technology	80 Fesslers Lane	(615) 255-0990	www.griffintechnology.com	119
HardCore Gear	8200 Jantzen Road #99	(209) 814-8632	www.hardcore4mac.com	112
IDG Expos	3 Speen St. Suite 320	(800) 645-EXPO	www.macworldexpo.com	81
IK Multimedia	Via Canalino 5	(800) 747-4546	www.groovemaker.com	115
Image Solutions	2443 208th St. Suite E3	(800) 352-3420	www.imagesolutions4U.com	116
InterLand Inc.	34 Peachtree Street NW, Suite 1400	(800) 599-0546	www.interland.net	5
IOGEAR by ATEN	16560 Aston Street	(949) 250-1260	www.iogear.com	61
Keyspan	3095 Richmond Parkway #207	(510) 222-0131	www.keyspan.com	115
Leister Productions	P.O. Box 289	(717) 697-1378	www.leisterpro.com	112
Mac Power Sales & Service	1080 Blossom Hill Road, Suite E	(888) 275-POWER	www.macpowerinc.com	112
Mac Solutions	11933 WilshireBlvd.	(800) 873-3RAM	www.macsolutions.com	118
MACE Group/macally Peripherals	5101 Commerce Drive	(800) 644-1132	www.macally.com	117
MacMall	2555 West 190th Street	(800) 965-3282	www.macmall.com	106, 107
Mac Of All Trades	500 Bishop Street , Suite E3	(800) 304-4639	www.macofalltrades.com	112
MacResQ	6405 Metcalf Ave. #200	(888) 447-3728	www.macresq.com	117
Mac Sales	7900 East Greenway Road, Warehouse #1	(888) 622-7253	www.macs4sale.com	116
MacSoft (a GT Interactive Company)	2300 Berkshire Lane North	(800) 229-2714	www.wizworks.com/macsoft	7
MacSoft (a GT Interactive Company)	2300 Berkshire Lane North	(800) 229-2714	www.wizworks.com/macsoft	63
MacSoft (a GT Interactive Company)	2300 Berkshire Lane North	(800) 229-2714	www.wizworks.com/macsoft	87
MacWarehouse	535 Connecticut Avenue	(800) 981-9192	www.warehouse.com/ma	104, 105
MacZone	707 South Grady Way	(800) 304-0286	www.maczone.com	92–95
MCE Powerbook Products	30 Hughes Street #203	(800) 5000-MAC	www.powerbook1.com	98
McGraw Publishing Peripherals	49 Hastings	(800) 883-9697	www.sittingmachine.com	119
MegaHaus	2201 Pine Drive	(800) 475-7531	www.megahaus.com	110
Metabox Corporation	701 Brazos Ste. 500	(800) 292-7753	www.metaboxusa.com	77
MicroMat Computer Services	8868 Lakewood Drive, Suite 273	(800) 829-6227	www.micromat.com	ibc
Microsoft	One Microsoft Way	(425) 882-8080	www.microsoft.com/mac	53
Microsoft	One Microsoft Way	(425) 882-8080	www.microsoft.com/mac	ifc, 1
Microsoft	One Microsoft Way	(425) 882-8080	www.microsoft.com/mac	55
Microsoft	One Microsoft Way	(425) 882-8080	www.microsoft.com/mac	57
Orange Micro, Inc.	1400 Lakeview Avenue	(714) 779-2772	www.orangemicro.com	9
Other World Computing	224 West Judd Street	(800) 275-4576	www.macsales.com	102,103
Power Max	6077A SW Lakeview Boulevard	(800) 441-6922	www.powermax.com	111
Power On Software	420 North Fifth Street, #830	(612) 317-0344	www.poweronsf.com	12
PowerON Computer Services	4323 Anthony Court #1	(800) 673-6227	www.poweron.com	113
MacBid.com			www.macbid.com	118
REAL Software	3300 Bee Caves Road Suite 650-220	(512) 292-9988	www.realsoftware.com	69
Save24seven.com	P.O. Box 15636	(877) 952-5059	www.save24seven.com	116
Shreve Systems	1200 Marshall Street	(800) 227-3971	www.shrevesystems.com	109
Software Architects	19102 North Creek Parkway suite 101	(425) 487-0122	www.softarch.com	83
Sonnet Technologies	15 Whatney	(800) 786-6260	www.sonnettech.com	23
studioZee	500 5th Avenue	(406) 495-0538	www.theZephIR.com	119
Symantec		(408) 253-9600	www.symantec.com	2
Thusby Software	5840 West Interstate 20, Ste. 160		www.thursby.com	65
United Developers	2019 N. Lamar St., Suite 240		www.macplay.com	59
VST Technolgies	125 Nagog Park	(978) 263-9700	www.vsttech.com	71
Wacom Technologies	1311 SE Cardinal Court	(360)896-9833	www.wacom.com	obc

macZone

a division of Zones.com

Authorized Catalog Reseller

FREE

With purchase of select Apple computers & qualifying

An iMac for every user.

Starting At

$794.98

AppleCare iMac Protection Plan $149.96 #722602

The new iMac line is sure to have what you want: great new colors; models priced to fit your budget; faster processors; more memory, expandable to a full gigabyte; bigger hard drives; beefed up 3D graphics; simply more of everything. In addition to Harman Kardon speakers and fanless operation, every iMac now comes with a full-sized keyboard and an optical mouse.

Your Choice!

Up To **$50 Instant Rebate!**

On select computers in this ad.

Offer good only for orders made by phone. Only one instant rebate per computer. Not valid with Mac Zone 50% OFF Memory offer or Free Memory offer. Can be used in conjunction with Free Shipping offer and Apple Rebate offer. Available for a limited time only.

GREAT GIFT IDEA!

iMac SE

Stunning graphics.

An 8MB ATI RAGE 128 Pro Graphics card with AGP and Open GL support delivers extreme 3D for work and play!

Desktop movies.

iMovie 2 makes editing digital video on all the new FireWire-enabled iMacs (DV, DV+, and DV SE models) as simple as the iMac itself is to use. Discover how fun and easy it is to make a home video blockbuster!

Pick a NEW iMac that's right for you!

Model	Processor	HD	RAM	Optical Drive	USB	FireWire	AirPort Ready	External Video	FREE** Memory	Item #	ONLY	Lease†
Indigo/350	350MHz	7.0GB	64MB	CD	2 ports	No	No	No	—	#124912	$794.98	–
Indigo DV	400MHz	10.0GB	64MB	CD	2 ports	2 ports	Yes	Yes	—	#124913	$994.98	–
Ruby DV	400MHz	10.0GB	64MB	CD	2 ports	2 ports	Yes	Yes	—	#124914	$994.98	–
Indigo DV+	450MHz	20.0GB	64MB	DVD	2 ports	2 ports	Yes	Yes	64MB	#124915	$1294.98	$46
Ruby DV+	450MHz	20.0GB	64MB	DVD	2 ports	2 ports	Yes	Yes	64MB	#124916	$1294.98	$46
Sage DV+	450MHz	20.0GB	64MB	DVD	2 ports	2 ports	Yes	Yes	64MB	#124917	$1294.98	$46
Graphite DV SE	500MHz	30.0GB	128MB	DVD	2 ports	2 ports	Yes	Yes	64MB	#124918	$1494.98	$53
Snow DV SE	500MHz	30.0GB	128MB	DVD	2 ports	2 ports	Yes	Yes	64MB	#124919	$1494.98	$53

†Business Lease: 36-month, fair-market value lease based on approved credit. Other leasing options available. Leases require a minimum order of $1000. Call 1-800-611-9751 for details. *With purchase of select Apple computers and qualifying service agreement. Up to $50 UPS ground. **Your choice of $50 off select computers in this ad or up to 64MB FREE memory. Call for details.

Upgrade Your iMac or iBook!

For IMac 350/400MHz

#674339	64MB	$39.99*
#123842	128MB	$99.99†
#715574	256MB	$199.99††

For IBook

#674337	32MB	$39.99
#715586	64MB	$39.99*

*After $15 mfr. mail-in rebate. Low Zone price: $54.99. †After $20 mail-in rebate. Low Zone price: $119.99. ††After $35 mail-in rebate. Low Zone price: $234.99. Offer expires 12/31/00.

ONLY $39.99* #727334

*After $20 mfr. mail-in upgrade rebate. Low Zone price $59.99.

Stylish replacement keyboard

iKey4 USB Keyboard

$10 PRICE DROP!

ONLY $39.99 #112271

$80 REBATE! with Combo Purchase*

BOTH FOR $199.98* #119554

***Purchase a UMAX Astra 3400, 42-bit scanner and Lexmark Z52 Color Jetprinter and get an $80 mfr. mail-in rebate.**

Low Zone price: $279.99. Offer expires 2/3/01.

Radeon Chip Set NEW!

ONLY $279.98 #126501

ATI Radeon Graphics Accelerator Card

Big sound for your iMac! USB

ONLY $199.99 #127797

Harman Soundstick 3 piece USB Speakers & Sub

Your own Mac digital studio for under $150!

ONLY $149.99 #117281

IXLA Photo Easy DualCam Edition for Mac

Create greeting cards, signs, banners and more

ONLY $39.95* #104517

*After $10 mfr. comp. upgrade mail-in rebate. Low Zone price: $49.95.

Nova Print Explosion

This iMac drive handles 1.44MB floppies

USB

ONLY $89.99 #112789

VST USB Floppy Drive w/Mac Color Kit

NEW!

palm

Palm m100

ONLY $149.98 #123695

NO SURCHARGE ON CREDIT CARDS

MasterCard VISA DISCOVER NOVUS

Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products sold by Multiple Zones International (MZI) are third party products and are subject to the warranties & representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, MZI makes no representation or warranty with respect to Y2K compliance of product sold. ©2000 Multiple Zones International Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple®, the Apple logo, Macintosh® and PowerBook® are registered trademarks of the Apple Computer, Inc.

SHIPPING!

service agreement. Up to $50 UPS ground. Call for details.

Mac Zone Exclusive!

FREE! 64MB Memory

UP TO $85 VALUE

Offers subject to change. While supplies last.

Mac Zone Exclusive!

50% OFF MEMORY!

With Apple CPU purchase

One module per CPU purchased. ONLY

iMac	#116663	128MB $60
iBook	#124973	128MB $90

Not valid with any other Mac Zone offer. While supplies last. Call for details!

FREE Scooter!

$80 Value!

with any Apple CPU purchase over $800

Not valid with any other Mac Zone offer. Offer subject to change. While supplies last. Ask for item #121996

Apple® iBook™ SE

466MHz G3

$1794.98

- FireWire Port
- DVD-ROM drive
- A/V output
- Snow accents
- iMovie 2

AppleCare iBook Protection Plan $229.96 #722603

iBook, the next generation.

Besides looking great, the new iBooks come with faster processors, bigger hard drives, 8MB ATI RAGE Mobility Card, a FireWire port and an A/V port for connecting your iBook to a big screen TV and stereo speakers. Now you can enjoy creating and sharing iMovies, playing the latest 3D games, and more.

Go wireless.

With optional Apple AirPort technology, you can put your household on a wireless network. Surf the Internet through a solid brick wall or play multiplayer games with someone down the hall!

Base Station #115919 **$294.98** AirPort Card #115920 **$99.98**

Apple® iBook™

366MHz G3

- FireWire 4c Port
- A/V output
- Snow accents
- iMovie 2

$1494.98

Processor	Hard Drive	RAM	On-chip Cache	Optical Drive	Ethernet	Ports	Modem	FREE** Memory	Item #	ONLY
Indigo/366	10.0GB Ultra ATA	64MB	256K	24X CD-ROM	10/100BT	USB/FW	56K	64MB	#124939	$1494.98
NEW! Key Lime/366	10.0GB Ultra ATA	64MB	256K	24X CD-ROM	10/100BT	USB/FW	56K	64MB	#124977	$1494.98
Graphite SE/466	10.0GB Ultra ATA	64MB	256K	6X DVD-ROM	10/100BT	USB/FW	56K	64MB	#124940	$1794.98
NEW! Key Lime/466	10.0GB Ultra ATA	64MB	256K	6X DVD-ROM	10/100BT	USB/FW	56K	64MB	#124978	$1794.98

Business Lease Available: 36-month, fair-market value lease based on approved credit. Other leasing options available. Leases require a minimum order of $1000. Call 1-800-611-9751 for details. *With purchase of select Apple computers and qualifying service agreement. Up to $50 UPS ground.
**Your choice of $50 off select computers in this ad or up to 64MB FREE memory. Call for details.

Microsoft

*After $100 mfr. mail-in rebate within 60 days of purchasing iBook/iMac. Low Zone price $425.99. Good through 12/31/00.

Norton SystemWorks 1.0 for Mac

#127129 $79.99*

*After $50 mfr. mail-in upgrade rebate for owners of NAV/NUM. Limited time offer.

Aladdin's StuffIt Deluxe Version 6.0

#127137 $69.99

Top Games!

Diablo II Mac	#117284	$54.99
The Big Kahuna	#108263	$49.99
Quake III Arena	#112118	$44.99
Civilization: Call to Power	#111575	$29.99
SimCity 3000	#111560	$44.98
Links LS 1.0	#625610	$42.98
Baldur's Gate	#625850	$39.99
Deus Ex	#701823	$39.99
Sid Meiers Alpha Centauri	#111574	$29.99
The Sims Expansion Pack Living Large	#741351	$29.99
Scrabble	#735107	$29.99
Age of Empires	#111565	$19.99
Star Wars Racer	#660228	$19.99
Madden NFL 2000	#111576	$19.99

New from Sony!

Great with iMovie!

Capture beautiful video & digital still images

ONLY $1699.99 #122087

Sony DCR-TRV20 Digital Video Camcorder

Store images on inexpensive floppy discs

ONLY $799.99 #694143

Sony Mavica MVC-FD90 Digital Camera

Gain the flexibility of digital & analog recording

ONLY $2299.99 #111848

Sony DCR-TRV900 Digital Camcorder with 3 CCD technology

Get excellent photo quality using innovative features

ONLY $449.99* #117019

*After $50 rebate. Low Zone price: $499.99. See Zones.com for details.

Sony Cybershot DSC-S30 Digital Camera

Play games in mid-air

Macally Motion-Sensing Mid-Air Joystick

ONLY $34.99 #662246

Desktop-quality printing on the road

USB

Canon BJC-85 USB BubbleJet Printer

ONLY $299.99 #687476

Makes surfing the Net a breeze

USB

ONLY $34.99 #121999

Macally iOptiNet USB Optical Internet Mouse

Tote your iBook and all your stuff

ONLY $59.99 #503773

Targus LapPac5

Corporate bids welcome!
Fax to 1-888-239-2591

A NASDAQ® COMPANY Ticker Symbol: MZON

Source Code MA011

Order by Phone Today
1.800.304.0286

Order Online
maczone.com

macZone
a division of Zones.com

APPLE $300 G4 Cube

AppleCare Power Mac G4 Protection Plan $225.96 #722601

Apple® Power Mac G4 Cube™

Big smallness.

One fourth the size of most desktop PCs, the G4 Cube lets you do more in less time – and gives you back a good chunk of your desktop real estate for other uses. While the dimensions of the Power Mac G4 Cube are small, the G4 Cube's full complement of high-performance hardware gives you the raw power you need for any computer task. Achieve your goals more quickly and more easily in such such demanding applications as desktop publishing, editing digital video, playing ultra-realistic 3D games, and/or scientific research. Order the Power Mac G4 Cube – the biggest little computer – today!

Your Choice!

Up To $200 Instant Rebate

On select computers in this ad.

Offer good only for orders made by phone. Only one instant rebate per computer. Not valid with Mac Zone 50% OFF Memory offer or Free Memory offer. Can be used in conjunction with Free Shipping offer and Apple Rebate offer. Available for a limited time only.

Apple® Power Mac Dual G4™

G4 supercomputing delivers.

Besides amazing CPU performance, the new Power Mac G4 comes with up to a 40-gig hard drive, a 16MB ATI RAGE Pro 128 graphics card, two FireWire ports, and support for up to 1.5GB of RAM.

Processor	Hard Drive	RAM Std/Max	Backside Cache	Optical Drive	Gigabit Ethernet	FREE** Memory	Item #	ONLY
G4 Cube/450MHz	20.0GB Ultra ATA-66	64MB/1.5GB	1.0MB at 225MHz	DVD-ROM	No	64MB	#124926	$1794.98
G4/400MHz	20.0GB Ultra ATA-66	64MB/1.5GB	1.0MB at 200MHz	DVD-ROM	Yes	64MB	#124920	$1594.98
G4/Dual 450MHz	30.0GB Ultra ATA-66	128MB/1.5GB	1.0MB at 225MHz	DVD-ROM	Yes	128MB	#124921	$2494.98
G4/Dual 500MHz	40.0GB Ultra ATA-66	256MB/1.5GB	1.0MB at 250MHz	DVD-ROM	Yes	128MB	#740288	$3194.98
G4/Dual 500MHz	40.0GB Ultra ATA-66	256MB/1.5GB	1.0MB at 250MHz	DVD-RAM	Yes	128MB	#124922	$3494.98

Business Lease Available: 36-month, fair-market value lease based on approved credit. Other leasing options available. Leases require a minimum order of $1000. Call 1-800-611-9751 for details.*With purchase of select Apple computers and qualifying service agreement. Up to $50 UPS ground. **Your choice up to $200 Instant Rebate on select computers in this ad or up to 128MB memory FREE. Call for details.

Apple 22" Cinema Display
22" diagonal Flat-Panel

ONLY #124925 $3999.98

Apple Studio 15" Display
15" diagonal Flat-Panel

ONLY #124924 $994.98

Apple Studio 17" Display
16" viewable Natural Flat Diamondtron

ONLY #124923 $494.98

Apple Power Mac G4 Blowout!
Call for latest prices!

Microsoft

- Built from the ground up for Macintosh
- Complete compatibility with Office 97/2000, Windows and Office 98
- Seamless integration with FileMaker for database work
- NEW Entourage for information management

*After $100 mfr. mail-in rebate within 60 days of purchasing an Apple iBook or iMac only. Low Zone price $425.99. Offer good 9/15/00 through 12/31/00.

Scanners

UMAX Astra 6400 Scanner
42-bit color, FireWire

ONLY $199.99* #113896

*After $50 Mfr. mail-in rebate. Low Zone price $249.99. Offer good through 12/31/00.

First professional scanner with FireWire
UMAX PowerLook 1100 FireWire

ONLY $899.99 #691469

Includes transparency adapter
Epson Perfection 1240U Photo USB Scanner

ONLY $299.99 #124650

42-bit, 2400x1200 8.5"x11"
Microtek ScanMaker 8700

ONLY $999.99 #124638

Printers

NEW! Graphite cover & 2880 dpi
Epson Stylus Color 880i InkJet Printer

ONLY $149.99 #124653

10 ppm and 6,000 page duty cycle
Lexmark E312

ONLY $379.98 #714084

A complete "photo lab" for digital cameras
Epson Stylus Photo 875DC InkJet Printer

ONLY $199.99* #113867

*After $100 mfr. mail-in rebate from Epson when you purchase any digital camera and an Epson Stylus Photo 875C printer. Low Zone Price: $299.99. Offer good through 12/31/00.

High-speed, network-ready printer
HP LaserJet 4050N USB Printer

ONLY $1449.99 #617964

NO SURCHARGE ON CREDIT CARDS

Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products sold by Multiple Zones International (MZI) are third party products and are subject to the warranties & representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, MZI makes no representation or warranty with respect to Y2K compliance of product sold. ©2000 Multiple Zones International Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple® the Apple logo, Macintosh® and PowerBook® are registered trademarks of the Apple Computer, Inc.

REBATES!
$200 PowerBook

Authorized Catalog Reseller

Mac Zone Exclusive!

FREE! UP TO **128MB Memory**

OR

Offers subject to change. While supplies last.

UP TO $170 VALUE

Apple® PowerBook™

Now with up to 20GB Ultra ATA-66!

AppleCare PowerBook Protection Plan $329.96 #722604

Mac Zone Exclusive!

50% OFF MEMORY!

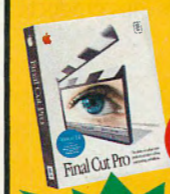
With Apple CPU purchase

One module per CPU purchased.

			ONLY
Cube	#116663	128MB	$60
G4	#124969	256MB	$125
PowerBook	#124970	256MB	$215

Not valid with any other Mac Zone offer. While supplies last. Call for details!

Final Cut Pro 1.2



ONLY $999.99 #114885

FREE* Video Series $400 Value!

FREE video-based training series for Final Cut Pro!

Ask for item #124984

*FREE with purchase of Final Cut Pro.

Apple Rebates!

$300 Apple mail-in rebate on G4 Cube and Apple Studio Display

Rebate applies to purchase of an Apple G4 Cube with an Apple Studio 15" Display (#124924) or an Apple Studio 17" Display (#124923), on same invoice. Rebate expires 12/31/00. Download rebate coupon from Zones.com. See Apple rebate coupon for complete details. Offer valid in conjunction with Mac Zone sponsored promotions.

$200 Apple mail-in rebate on select Apple PowerBooks

Rebate applies to purchase of PowerBook 500/12GB, 400/10GB and 500/20GB. Rebate expires 12/31/00. Download rebate coupon from Zones.com. See Apple rebate coupon for complete details. Offer valid in conjunction with Mac Zone sponsored promotions.

Portable power play.

With the new PowerBooks' larger hard drives, powerful G3 processors, and up to 10 hours of battery life (with a second Li-Ion battery installed), you get enough horsepower for everything from designing huge graphics spreads in Photoshop to editing professional film projects in Final Cut Pro – even when you're far away from electrical outlets. With an ultrasharp, 14.1-inch TFT active-matrix display, support for dual displays, and a 24-bit video output port, PowerBooks let you do it all and see it all with exceptional clarity and versatility. Plus, for adding a special touch to desktop movies, the new PowerBooks come with iMovie 2.

Kingston TECHNOLOGY

Upgrade Your PowerBook!

For PowerBook 400/500

#116020	64MB	$109.99
#116021	128MB	$199.99
#116022	256MB	$429.99
#116023	512MB	$1299.99

Memory available for other PowerBook models.

QuarkXPress 4.1 $769.99 #128395

NEW!

Macromedia Dreamweaver UltraDev 4 Fireworks 4 Studio $629.98 #128340

Terran Cleaner 5 $579.99 #740321

Processor	Hard Drive	RAM	Backside Cache	Optical Drive	FireWire	Modem	ATI RAGE Graphics	FREE** Memory	Item #	ONLY
New 400MHz	10GB Ultra ATA-66	64MB	1.0MB L2	DVD-ROM	2 Ports	56K	128-2X AGP	128MB	#124941	$2494.98
500MHz	12.0GB Ultra ATA-66	128MB	1.0MB L2	DVD-ROM	2 Ports	56K	128-2X AGP	128MB	#116009	$3294.98
New 500MHz	20GB Ultra ATA-66	128MB	1.0MB L2	DVD-ROM	2 Ports	56K	128-2X AGP	128MB	#124942	$3494.98

Business Lease Available: 36-month, fair-market value lease based on approved credit. Other leasing options available. Leases require a minimum order of $1000. Call 1-800-611-9751 for details. *With purchase of select Apple computers and qualifying service agreement. Up to $50 UPS ground. **Your choice up to $200 Instant Rebate on select computers in this ad or up to 128MB memory FREE. Call for details.

Storage

FREE Iomega Zip 250 2-pack of unformated media!

Iomega Zip 250 Portable USB Drive

Ultra-thin!

ONLY $179.99 #119675

Perfect for digital video

VST 30GB FireWire Hard Drive

ONLY $526.99 #720041

Revolutionary interface boosts read and write speeds

ONLY $369.99* #113595

QPS 12x10x32x Ext. FireWire CD-RW

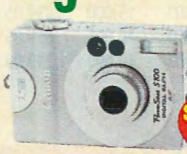
*After $30 mfr. mail-in rebate. Low Zone Price: $399.99.

Keep stocked up on affordable CD-Rs

Zones CD-R 80-minute 12X 50pk – Spindle

ONLY $19.99 #116186

Digital Video & Photo



$100 PRICE DROP!

ONLY $499.99 #117017

Fits in your pocket

Canon S100 Digital Elph Camera

Ultra-compact DV camcorder

Canon Elura 2

NEW!

Call for price $1394.99 #124368

3.34-megapixel with QuickTime Movie

Olympus C-3000 Digital Camera

ONLY $799.99 #699211

Sharp Nikkor 3X Zoom

Nikon Coolpix 990

ONLY $899.99 #111188

The world-standard image-editor!

NEW Version!

ONLY $189.99 #117291

Photoshop 6.0 Upgrade

- Streamlined interface
- Paragraph text options
- On-canvas text entry
- New layer management
- Superb vector and text support

BONUS! **GoLive 30-day FREE trial CD included in box.**

Activate full version for only $99 – a $200 value! Offer ends 3/31/01.

Corporate bids welcome!
Fax to 1-888-239-2591

A NASDAQ® COMPANY Ticker Symbol: MZON

Source Code MA011

Order by Phone
1.800.304.0286

Order Online Today
maczone.com

APS TECH — Another breakthrough:

With APS Tech FireWire Plus, you don't have to choose.

APS Tech is proud to offer a breakthrough interface solution. FireWire Plus technology gives you FireWire (IEEE 1394) and USB support on one device, so you don't have to choose between interfaces. Delivering cross-platform, dual support and automatic configuration, FireWire Plus is the ultimate, universal connectivity solution. Look for APS Tech FireWire Plus products in this ad and order yours today.

FireWire USB UNIVERSAL SERIAL BUS

$389.95 APS Pro2

APS CD-RW 16x10x40 FireWire *plus*

- Speedy CD-RW drive with FireWire (IEEE 1394) and USB interfaces
- Hot-swappable for sharing among workstations

FireWire USB UNIVERSAL SERIAL BUS

$369.95 APS Pro2

APS 60GB FireWire *plus* Hard Drive

- Easiest connections ever – hot-swappable, no terminator or device ID
- Ideal for personal video storage and editing, large-scale imaging/graphics
- FireWire (IEEE 1394) and USB interfaces

APS FireWire *plus* Hard Drives

Model	APS Pro2
APS 20GB 7200 RPM FireWire Plus Hard Drive	$249.95
APS 40GB 7200 RPM FireWire Plus Hard Drive	329.95
APS 60GB 7200 RPM FireWire Plus Hard Drive	369.95
APS 75GB 7200 RPM FireWire Plus Hard Drive	749.95

USB UNIVERSAL SERIAL BUS

$229.95 APS Pro2

APS CD-RW 4x4x24 USB

- Convenient USB interface, perfect for iMacs, G3s, G4s, other USB computers
- Hot-swappable to switch among workstations
- Winner, MacAddict "Spiffy!" Award, July 2000

APS CD-RW SCSI Drives

Model	Price
APS CD-RW 12x10x32 SCSI Pro2	$299.95
APS CD-RW 16x10x40 SCSI Pro2	379.95

APS CD-RW FireWire *plus* Drives

Model	Price
APS CD-RW 8x4x32 FireWire Plus Pro2	$279.95
APS CD-RW 12x10x32 FireWire Plus Pro2	329.95
APS CD-RW 16x10x40 FireWire Plus Pro2	389.95

$499.95 Internal Configuration

APS ST 18GB Ultra160 LVD SCSI 15,000 rpm

- 15,000 rpm LVD drives offer you fastest reliability and performance, EVER
- Average seek times as fast as 3.9ms

APS Ultra2 Wide / Ultra160 LVD SCSI Drives

Model	RPM	*Internal	APS Pro
APS ST 9GB Ultra160 LVD	7200	$229.95	$299.95
APS ST 18GB Ultra160 LVD	7200	339.95	409.95
APS ST 18GB Ultra160 LVD	10,000	449.95	519.95
APS ST 18GB Ultra160 LVD	15,000	499.95	569.95
APS ST 36GB Ultra160 LVD	10,000	699.95	769.95
APS ST 73GB Ultra160 LVD	10,000	1,219.95	1,299.95

Drives listed above carry a five-year warranty.

APS Ultra SCSI Drives

Model	RPM	*Internal	APS Pro
APS ST 9GB	7200	$239.95	$299.95
APS ST 18GB	7200	349.95	419.95

Drives listed above carry a five-year warranty.

** Internal configuration does not include a mounting bracket. Intended as a replacement internal SCSI drive.*

Spacious storage

FireWire

$749.95 APS Pro2

APS 4.7GB DVD-RAM FireWire

- Rewritable DVD discs for archiving or digital video storage
- Back up 4.7GB (9.4GB compressed) with FireWire interface

APS DVD-RAM Drives

Model	Price
APS 4.7GB DVD-RAM FireWire Pro2	$749.95
APS 4.7GB DVD-RAM SCSI Pro2	649.95

USB UNIVERSAL SERIAL BUS

$189.95 APS Pro2

APS 20GB USB Hard Drive

- Ultimate combination of compatibility and convenience
- Hot-swappable, no SCSI or IDE setup hassles

Drives on these pages are covered by the APS 30-Day Money-Back Guarantee.

Visit our closeout page at:
www.apstech.com

Source Code: MA01

new FireWire® plus.

Added insurance

APS HyperDAT® IV LVD

- Longer, higher density tape for effective corporate network backup
- DDS-4 20GB native capacity

$1,099.95

APS Pro2 case with Retrospect software for Mac and PC

APS AIT Plus Ultra Wide Pro

- 35GB (native), 70GB (compressed) backup for video, 3-D, graphics workstations
- Fast transfer speed of up to 3.6MB/s (native)

$1,649.95

APS Pro case with Retrospect software for Mac and PC

Images of perfection

Canon Elura2 Digital Video Camcorder

- 10X optical/40X digital zoom lens
- IEEE 1394 (FireWire) terminal
- Analog line-in for preserving originals, making copies

$1,599.95

(Call for current price)

Sony CyberShot DSC-S50

- 2.1 megapixel Super HAD™ image sensor
- 3x optical zoom, 6x precision digital zoom

$599.95

APS Tape Backup

Model	Price
APS HyperDAT® III (DDS-3) LVD Pro2	$799.95
APS HyperDAT® IV (DDS-4) LVD Pro2	1,099.95
APS DLT8000 LVD	3,899.95
APS AIT PLUS Ultra Wide Pro	1,649.95
APS AIT II LVD Pro	3,299.95
APS AIT Autoloader Ultra Wide	3,199.95
APS AIT II Autoloader LVD	5,299.95
APS DDS-4 Autoloader LVD	3,499.95

Ships with Retrospect software for Mac and PC

Printers

Model	Price
EPSON Stylus 900 Color Printer	$399.95
EPSON Stylus Photo 1270 USB Color Printer	499.95
EPSON Stylus 1520 Color Printer	499.95
EPSON Stylus 3000 Color Printer	1,249.95
EPSON Stylus Pro 5000 Color Printer	2,999.95

Digital Video Camcorders*

Model	Price
Canon XL1	CALL
Canon GL1	CALL
Canon Optura Pi	CALL
Canon ZR10	CALL
Canon Elura2	$1,599.95
Canon Elura2MC	CALL

Digital Cameras*

Model	Price
Sony Digital CyberShot DSC-S30	$499.95
Sony Digital CyberShot DSC-S50	599.95
Sony Digital CyberShot DSC-S70	799.95
Nikon Coolpix 800	549.95
Nikon Coolpix 950	799.95
Nikon Coolpix 990	899.95
Canon PowerShot S10	499.95
Canon PowerShot S20	699.95

Power Management

Model	Price
APC Surge Station Pro 8	$32.95
APC Surge Station Pro 8 w/ 2 Tel	37.95
APC Net 8 Surge Station	33.95
APC Net 8 Surge Station w/ Net P	47.95
APC Line Conditioner, R-600 APC	99.95
APC Line Conditioner, R-1250 APC	129.95
APC BackUPS Pro 280S APC	134.95
APC BackUPS Pro 420S APC	229.95
APC BackUPS Pro 650S APC	269.95
APC BackUPS Pro 1000S APC	389.95
APC BackUPS Pro 1400S APC	499.95

Displays*

Model	Price
Sony Monitors	
F-Series Monitor 21" Sony GDM-F500R	$1,799.95
G-Series Monitor 19" Sony CPD-G400	649.95
G-Series Monitor 21" Sony CPD-G500	1,199.95
LaCie Monitors	
LaCie electron19blue II	$599.95
LaCie electron22blue	1,299.95
Sony LCD Displays	
Sony Multiscan SDM-N50	$1,499.95
Sony Multiscan CPD-M151	999.95
Sony Multiscan CPD-L181	2,999.95

LaCie electron19blue II

- 1600 x 1200 @ 85Hz with 0.24mm dot pitch
- Advanced flat screen technology completely eliminates distortion

$599.95

* *These products are not covered by the APS 30-Day Money-Back Guarantee. Products are covered by their manufacturer's warranty.*

Mac OS, FireWire and the FireWire logo are registered trademarks of Apple Computer, Inc. APS and APS Tech are registered trademarks. Other brand or product names are registered trademarks or trademarks of their respective holders.

- *30-day money-back satisfaction on all APS brand drives and accessories. Your risk is the cost of shipping. Monitors and 3rd party products carry warranties from their respective manufacturers.*
- *SCSI cables may be purchased separately.*
- *APS' warranty is a pass-through of the mechanism manufacturer's warranty which will be serviced by APS for one year. APS warrants APS branded enclosures, brackets and power supplies for a period of one year from the date of purchase and will, at its discretion, replace or repair products found to be defective according to the specific terms of the warranty accompanying the product.*
- *Refused orders subject to 20% restocking fee.*
- *International customers must pay for all shipping charges.*
- *Prices and specifications are subject to change without notice.*
- *Not responsible for typographical errors.*
- *Your APS Drive unit may contain one or more components that were in prior use, but which have been inspected and repaired or rebuilt as necessary. These components, if any are covered by the same warranty provisions, exclusions and limitations to the same extent, and on the same terms as otherwise "new" components.*
- *© 2000, APS Tech. All Rights Reserved.*

Call 800 - 443 - 4202

Corporate Sales (800) 395 - 5871 • International (503) 844 - 4600
5am - 10pm, Monday - Friday, 6am - 8pm Saturday - Sunday, Pacific Time

APS TECH
Advanced tools for digital visionaries™

www.powerbook1.com

secure online ordering

MCE POWERBOOK PRODUCTS

MCE USB FlexLight

Don't get caught in the DARK with your PowerBook!

Conveniently lights up your keyboard and surrounding paperwork! Powered by the PowerBook's USB port.

$19.99

MCE DataShuttle Xtreme

PC Card, FireWire, or USB

The world's most *VERSATILE* Storage Device!

You have the Power to Choose:

- FireWire for high-speed data transfer
- USB for compatibility with iMac and iBook
- PC Card for compatibility with PowerBooks

* See web site for details.

	30GB	20GB	Kit
FireWire	$629	$429	$139
USB	$599	$399	$119
PC Card	$579	$379	$99

Turn your old internal PowerBook drive into an external drive!*

COMPLETE POWERBOOK STORAGE SOLUTIONS by MCE Mac

MCE MobileStor

THE BEST Internal Hard Drive Upgrade Kits for your PowerBook!

For use in PB 2000, iBook, PB G3 Series, G3, 3400, 2400 & 1400*

MobileStor 6G	6GB	3 yr wty	$179
MobileStor 10G	10GB	3 yr wty	$199
MobileStor 20G	20GB	3 yr wty	$299
MobileStor 30G	30GB	3 yr wty	$499

Included FREE in every MCE MobileStor hard drive upgrade solution is the *complete* MCE PowerBook Hard Drive Installation Kit which includes an illustrated installation manual, and all of the appropriate tools and brackets needed for the proper installation of your new MCE MobileStor hard drive kit.

* see website for details and compatibility with other PowerBook models

Ultra-DMA Drives!

MCE Xcarét Pro Expansion Bay Hard Drives

- Ultra Fast! • Hot Swappable • Bootable
- Compact • Protective MCE Carrying Case
- Kit is perfect for your old internal PB drive!*

Perfect for audio & video recording & editing.

multimedia tuned

32GB	30GB	20GB	10GB	Kit
160 min.†	150 min.†	100 min.†	50 min.†	Turn your old internal PowerBook drive into an expansion bay drive!*
$699	$649	$449	$349	$149

†approximate FireWire DV Video Capture time in minutes • See web site for details.

MCE Xcarét Pro Expansion Bay CDRW Drives

For PowerBook G3 Series 98 or PowerBook G3 99/2000

4x Record
4x Re-Write
20x Read

- Bootable! • Hot Swappable
- Fast Backup or Data Transfer
- Adaptec Toast™ Software
- Protective MCE Carrying Case

NEW LOW PRICE!

$399

CUSTOM POWERBOOK CONFIGURATIONS

ASK ABOUT OTHER CUSTOM CONFIGURATIONS & BUNDLES!

Authorized Reseller

$200 mail-in Rebate on PowerBooks! through 12/31/00

Apple PowerBook 2000

- 400MHz/1MB L2 cache
- 20GB MCE Hard Drive
- 14.1" Display
- 128MB SDRAM
- 2 FireWire Ports
- 2 USB Ports
- DVD-ROM Drive
- AirPort Ready

$2799 compare to $2999*

w/30GB HD†...$3099

†in place of 20GB HD; compare to $3299*

Apple PowerBook 2000

- 500MHz/1MB L2 cache
- 30GB MCE Hard Drive
- 14.1" Display
- 128MB SDRAM
- 2 FireWire Ports
- 2 USB Ports
- DVD-ROM Drive
- AirPort Ready

$3599 compare to $3799*

w/extra Micro-AC Adapter & Battery...$3799 compare to $3997*

* Apple Store 9/22/00

Apple PowerBook 2000

Media Developer Bundle

- 500MHz/1MB L2 cache
- 30GB MCE Hard Drive
- MCE Expansion Bay CDRW Drive
- 512MB SDRAM • DVD-ROM Drive
- 14.1" Display • 2 USB Ports
- 2 FireWire Ports • AirPort Ready

$4999

w/MCE 30GB Expansion Bay Hard Drive...$5599

Audio & Video Developer PowerBook Bundles

MCE CardBus Upgrade Service for PB 2400 & 3400/G3

opens up the possibilities for USB, FireWire, 10/100 Ethernet, expanded Video

See website for details!

RATOC Systems

High-speed PC Card adapters for audio/video data transfer on your PowerBook!

CBFW2 FireWire CardBus PC Card	$129
CB31PB Ultra SCSI CardBus PC Card	$129
CB32PB UltraWide SCSI CardBus PC Card	$259

SCSI Cards for new PB 2000

World's Smallest PowerBook AC Adapter!

for PB 2000, iBook, PB G3, 3400, 2400, 1400 & 2300

Smaller than Apple's Smallest Adapter!!

Micro-AC Adapter only $85

Save space and weight in your carrying case!!

MADSONLINE

PowerBook Auto/Air Adapter charges PB in the car or plane! $80

Perfect fit for PowerBook 2000 & G3 Series 98/99!

PowerBook G3 Series Carrying Cases

Slimline Case...$99

Productivity Case...$139

IREZ

TURN YOUR POWERBOOK OR IBOOK INTO A VIDEO POWERHOUSE!

CapSure PC Card $99

• Type 2 PC Card • Import movies or stills through S-Video or Composite • Full-Motion (up to 30fps) preview at up to 1024x768

CapSure USB S-Video or Composite Built-in Microphone $119

CapSure/Kritter SV BUNDLE DEAL! $229

Kritter USB Camera w/claw Blue, Orange, Black, or Ice $99

Kritter USB Camera w/wand $129

Kritter SV Camera Requires CapSure Card $139

VST TECHNOLOGIES Incorporated

Expansion Bay Zip Drives

100MB starting at $199

250MB $279

FireWire Portable Drives

6GB $369

18GB $635

Charger, Battery & AC Adapter Bundle $299

PRO AUDIO EQUIPMENT FOR POWERBOOKS

Digigram VXpocket

Professional ANALOG AND DIGITAL audio interface for your PowerBook! $699

Steinberg USB-2-Midi Interface $99

PowerBook & iBook Memory Upgrades!!

See our web site for latest pricing!!

Apple Computer

High-Capacity LI-Ion Batteries!

PowerBook 2400 Battery $249

PowerBook G3 99/2000 Battery $139

macally

$29 iMouse Jr. USB for iBook

$79 CardBus to USB Adapter

iHub Jr. 3 Port USB Hub $39

$69 USB Floppy Drive

$35 iOpti Jr. Compact Optical Mouse

Great stocking stuffers!

MCE Expansion Bay Device Carrying Case

Convenient protection for expansion bay devices! $19

MCE USB Mobile Mini Mouse

$29

Klear Screen PowerBook Screen Cleaner

three 6-packs $25

Kensington

Notebook MicroSaver Security System $43

Canon BJC-85 Portable USB Bubble Jet Printer

$299

30 Hughes Suite 203 • Irvine, CA • 92618

Visa / MC / AmEx / Discover / P.O.

1-800-5000-MAC • 949-458-0800 • fax 949-458-1803

Visit www.clubmac.com/storage For More Products

ClubMac® Authorized Reseller

STORAGE DEVICES

Firewire CDRW 12x10x32x

Only $359

The ClubMac FireWire CDRW drive offers you speed, convenience and reliability all at a great price. Fast 12x writing, 10x re-writing and 32x read make this drive ideal for archiving and exchanging all types of data including MP3's!

C104 5530

Software Features	CD Master OEM	Toast 4.1 OEM
Use other applications while you burn CD's	Yes	No
Burn video CD's that can be played in DVD players from any QuickTime movie	Yes	No
Convert MP3 to CDA on the fly as you burn	Yes	No

BURN-Proof™

Includes: radialogic CD MASTER

*Burn-Proof is a licensed technology of Sanyo Electronic Ltd.

FireWire Drives Capacities Up To 75GB!!

30 DAY Money Back Guarantee — 1 Year Manufacturer's Warranty

As Low As $199

The ClubMac FireWire Drive is an external hard drive with capacities presently ranging from 10GB to 75GB. Not only can you stack up to 63 drives, but ClubMac FireWire drives are fully hot swappable and mount seamlessly on your desktop when plugged into a FireWire port.

C104 5501	CM FireWire HD 10GB	$199
C104 5502	CM FireWire HD 15GB	$209
C104 5503	CM FireWire HD 20GB	$229
C104 5506	CM FireWire HD 30GB	$269
C104 5507	CM FireWire HD 45GB	$329
C104 5508	CM FireWire HD 60GB	$559
C104 5509	CM FireWire HD 75GB	$629

Includes Formatting & Partitioning Software from: radialogic

SCSI CDRW

Faster is Better!

8X/8X/24X SPEED!

Still Only $299

ClubMac CDRW's include 25/50 SCSI Cable, Power Cord, Terminator, One Blank Disc and CD authoring software.

FEATURES

- 8X Write
- 8X Re-Write
- 24X Read
- 2MB Data Buffer
- 160ms Avg. Access Time
- Up to 2400K Read Speed

C104 4028 8X/8X/24X CD-RW with Software $299

TAPE BACKUPS

SONY 20/40GB DDS-4

As Low As $669

C104 1302

FEATURES

- 20GB of native/40GB compressed capacity with full backward read and write compatibility to DDS-1
- Double the transfer speed of DDS-3, DDS-4 can back up 8.64GB per hour.

C104 1302	Sony 4-8GB DDS-2 DAT Drive	$669
C104 1304	Sony 12-24GB DDS-3 DAT Drive	$789
C104 1306	Sony 20-40GB DDS-4 DAT Drive*	$1099

USB HARD DRIVES

PICK YOUR COLOR

USB

Starting At $155

ClubMac External Drives are preformatted and thoroughly tested. ClubMac USB Drives include a 30-day Money Back Guarantee. External Hard drives include preloaded Radialogic software, user's guide, USB cable, and power cord.

C104 3530	ClubMac External 15gb USB Drive	$155
C104 3540	ClubMac External 20gb USB Drive	$175
C104 3550	ClubMac External 30gb USB Drive	$199

TDK

12x80 Minute 700MB CDR Media — 20 pack with sleeves $16.99

T210 1080

Verbatim

12x 74 Minute 650MB CDR Media — 100 pack $69.95

V010 1191

maxell

8x 74 Minute 650MB CDR Media — As low as $.79 ea

M030 1067

SONY

74 Minute 650MB CDRW Media — As low as $2.99

S100 1072

Verbatim

74 Minute 650MB CDRW Media — As low as $2.99

V010 1081

IMATION

Slim "Colored" Jewel Cases — 25 pack $9.99

I220 1071

IOMEGA

USB 100MB ZIP

The USB Super Floppy Preferred by Millions

New!

I044 1046

Fast Unlimited Capacity 100MB at the time.

USB

100MB Media as low as $8.95

$97.95

USB 250 ZIP

$168.95

I044 1041

250MB Media as low as $15.95

HIP ZIP

$299.95

I044 1047

Digital MP3 Player

HARD DRIVES

SCSI

Also Available in external

Quantum

		Int./Ext.
9.1GB	Atlas V 7200rpm	$209/$309
18.3GB	Atlas V 7200rpm	$339/$439
36.7GB	Atlas V 7200rpm	$609/$709

Seagate

		Int./Ext.
18.4GB	Cheetah 10000rpm	$389/$489
36.7GB	Cheetah 10000rpm	$639/$739
73.4GB	Cheetah 10000rpm	$1189/$1289

ATA/IDE

Quantum

10GB	Fireball AS 7200rpm $109	30GB	Fireball AS 7200rpm $139
20GB	Fireball AS 7200rpm $129	40GB	Fireball AS 7200rpm $159

IBM

30GB	Deskstar 75GXP $165	60GB	Deskstar 75GXP $375
45GB	Deskstar 75GXP $229	75GB	Deskstar 75GXP $495

SOURCE CODE 62011

ClubMac®

ORDER TODAY! 24 HOURS A DAY 7 DAYS A WEEK

1-800-217-9208

ORDER ON-LINE

WWW.CLUBMAC.COM

NO SURCHARGE

Sales 24 Hours a Day, 7 Days a Week	(800) 217-9208	
Customer Service M-F 6am-7pm, Sat. 8-12 Noon PST	(800) 551-6398	
Inquiries & International Sales 24 Hours a Day, 7 Days a Week	(949) 768-8130	
24-Hour Fax	(949) 768-9354	
Corporate/Educational Sales M - F 6am - 6pm PST	(800) 258-2621	
Technical Support M - F 6am - 6pm PST	(800) 854-6227	

E-Mail: ClubMac Sales .....cmsales@clubmac.com
Customer Service ...custsvc@clubmac.com
Technical Support....techsup@clubmac.com

Mail: ClubMac .....7 Hammond, Irvine, CA 92618

Authorized Reseller

ClubMac®

FREE! RAM + HUGE REBATES

Power Mac G4

Now up to 500MHz X2 Dual Processors!

FREE!* 128MB RAM $185 Value!

Includes iMovie 2

4.9% Financing Available from American Express Equipment Financing

SERVICE NET YOUR REPAIR CONNECTION

*$30 Installation Fee applies

Up to $500 Rebate!

400MHz $1595

450MHzMP $2195†

500MHzMP DVD ROM $2695**

500MHzMP DVD RAM $2995**

†After $300 MFR Mail-in Rebate
**After $500 MFR Mail-in Rebate
Expires 12/31/00

400Mhz FREE MEMORY $1595
A102 1853 400MHz/64MB RAM/20GB HD/DVD-ROM/RAGE 128 Pro/Gig-Ethernet/56k modem

450MhzMP FREE MEMORY $2195†
A102 1854 Dual 450MHz/128MB RAM/30GB HD/DVD-ROM/RAGE 128 Pro/Gig-Ethernet/56k modem

500MhzMP FREE MEMORY $2695†
A102 1855 Dual 500MHz/256MB ROM/40GB HD/DVD-ROM/RAGE 128 Pro/Gig-Ethernet/56k modem

500MhzMP FREE MEMORY $2995†
A102 1856 Dual 500MHz/256MB RAM/40GB HD/DVD-RAM/RAGE 128 Pro/Gig-Ethernet/56k modem

†Price after Apple Mail-in Rebate: $300 on 450MHz PowerMac G4 (p/n A102 1854), $500 on 500MHz PowerMac G4's (p/n A102 1855 & 1856). Expires on 12/31/00

POWERBOOK G3

500MHz $2595† A102 1761

Save $700

*Price Reflects $200 Apple Mail-in Rebate. Call Your ClubMac Sales Rep for Details!

FREE* 128MB

400MHz A102 1857 64MB RAM 10GB HD DVD-ROM $2295**
500MHz A102 1858 128MB RAM 20GB HD DVD-ROM $2795**

PowerBook Blowout

500MHz A102 1761 128MB RAM 12GB HD DVD-ROM $2595**

*$30 installation fee applies. Offer only valid for PowerBooks on this page. Offer expires 1/8/00.

New! Cube 450Mhz!

FREE!† 128MB RAM $185 Value

Only 8"x8"

Includes iMovie 2

*Price after $300 Apple Mail-in Rebate when Purchased w/qualifying Apple Monitor

Call Your ClubMac Sales Rep for Details!

450Mhz $1495*
A102 1852 450MHz/64MB RAM/20GB HD/RAGE 128/10-100BASE-T Ethernet/56k modem

†$30 installation fee applies. Offer only valid for G4 Cube on this page. Offer expires 1/8/00.

PRINTERS

HEWLETT PACKARD USB

Deskjet 932C $199.99

HP

HP DeskJet 970CSE InkJet	$299.95
HP DeskJet 350CBI Portable Mac	$329.95
HP DeskJet 842C	$149.99
HP DeskJet 1220Cse 11"x17"	$499.99
HP DeskJet 952C	$249.99

Canon

BJC-85 Portable Ink Jet USB	$329
BJC-3000 1440dpi Ink Jet USB	$99
BJC-S450 INK JET 10PPM USB	$149
BJC-8200 COLOR PRINTER MAC/WIN	$299
MULTIPASS C555 PRINT/FAX/SCAN USB	$199
MULTIPASS C635 PRINT/FAX/SCAN USB	$249

EPSON Stylus 777i 2880 DPI $99

USB

Epson

Stylus 980 2880dpi Inkjet USB	$199*
Stylus 980N 2880dpi Inkjet w/ENET	$449
Stylus 880 2880dpi Color Ink Jet USB	$149
Stylus 777 2880dpi InkJet USB	$99
Stylus Photo 2000P USB 6-Color Photo Printer	$899
Stylus Photo 870 6-Color Photo Printer	$249
EPL-5700i Laser Printer 8ppm USB	$349*

*After $50 Mail-in Rebate. Ends 1/31/00

Brother

HL-1240 Laser 12ppm 2MB 600dpi	$299
HL-1250 Laser 12ppm 4MB 1200dpi	$399
HL-1270N 4MB 12ppm 1200dpi W/ENET	$499
MFC-8300 Laser Multifunction USB	$399
MFC-8600 Laser Multifunction USB	$499

MONITORS

Apple® Studio Display

17" $499 A106 1405

- 17" Diamondtron CRT (16"visible)
- .25 Dot Pitch
- MaxRes. 1600x1200@85Hz

Apple

17" Studio Display (M7770ZM/A)	$499
15" Flat Panel Display (M7928ZM/A)	$999

Sony

E100 15/14".24-.25AGP 1280x1024@60Hz	$198
E210 17/16".24-.25AGP 1600x1200@60Hz	$339
E200 17/16".24-.25AGP 1600x1200@75Hz	$389
E400 19/18".24-.25AGP 1800x1440@60Hz	$539
E400 19/18".24-.25AGP 1800x1440@70Hz	$599
E500 21/19.8".24AGP 2048x1536@65Hz	$1049
G500 21/19.8".24AGP 2048x1536@75Hz	$1149
G500 21/19.8".22AGP 2048x1536@75Hz	$1799
G500 24/22.5".23-.27AGP 2304x1440@80Hz	$2429

NEC/MITSUBISHI Diamond Plus 200

$949 M246 1061

- 22" Flat CR (20"visible)
- .24mm AGP
- Max Res. 1800x1440@70Hz

NEC/Mitsubishi

AccuSync AS50 15/13.8".28mm, 1024x768@70Hz	$159
AccuSync AS50 17/16".27mm, 1280x1024@66Hz	$219
FE700 17/16".25AGP 1280x1024@66Hz	$279
Diamond Plus 73 17/16".25AGP, 1280x1024@60Hz	$289
AccuSync AS90 19/18".26mm, 1600x1280@76Hz	$329
Diamond Plus 91 19/18".25-.27AGP, 1600x1200@60Hz	$489
Diamond Plus 200 22/20".24mm, 1800x1440@72Hz	$949
Diamond Pro 2040u 22/20".24mm, 2048x1536@75Hz	$1129

Viewsonic

EF70 17/16".25AGP 1280x1024@60Hz	$279
PF775 17/16".25AGP 1600x1200@60Hz	$349
PF790 19/18".25AGP 1600x1200@60Hz	$489
GS815 21/20".25mm 1600x1200@95Hz	$899

SCANNERS

MICROTEK USB ScanMaker X12USL $319 M150 1089

Microtek

ScanMaker 4700, 42bit , Mac/PC	$239
ScanMaker V6USL, 42bit 8.5x14,USB,	$129
ScanMaker 4, 36bit Dual Format	$449
ScanMaker 8700,42bit Dual Format	$999

Epson

Expression 1600SE, 36bit SCSI & USB	$799
Expression 1600 FireWire,USBw/Trns.Adp	$1399

UMAX Powerlook 2100XL SCSI 11"x17" Includes: Full Version of Adobe PhotoShop $1499 U010 1119

Umax

Astra 6400, 42bit FireWire w/Trans. Cover	$199*
Astra 3450 42bit USB w/Trans. Adapter	$129
Powerlook III 42bit USBw/Trns.Adp. Full Photoshop	$999
Powerlook 1100 Duo FireWire w/Full Photoshop	$1199

*After $50 Mail-in Rebate.

Agfa

Arcus 1200 42bit Multi Plate	$799
SnapScan E50 42bit w/Trans. Adapter	$179

PROCESSOR UPGRADES

SONNET SIMPLY FAST

Crescendo G3/PCI 400Mhz	$299
Crescendo G4/ZIF 400Mhz	$499
Crescendo G4/PCI 450Mhz	$599

newertech

MAXpowr G3 500MHz PCI	$399
MAXpowr G4 400MHz PCI	$399

XLR8

MACh Carrier G3 500MHz PCI	$579
MACh Speed G3z 500MHz	$499
MACh Carrier G4 400MHz PCI	$549

CALL 1-800-217-9208 FOR A FREE CATALOG

APPLE BRANDED PRODUCTS are not returnable. If you experience problems with your Apple purchase contact Apple at 1-800-SOS-APPL. WARRANTIES: All items manufactured by ClubMac are returned to ClubMac for warranty repair. All other items carry manufacturer's warranty. MONEY BACK GUARANTEE: All products manufactured by ClubMac carry a 30 day money back guarantee. ClubMac extends all other manufacturers' return policies to its customers. Non-ClubMac products carry 30 day money back guarantee when specified. RETURNS: Call for RMA number! Any product that is returned WITHOUT an RMA number will be refused. ALL PRODUCT INFORMATION AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS.

FREE! 64MB RAM On Select iMac & iBooks

See Below for Details

Authorized Reseller

DIGITAL CAMCORDERS

CANON XL1

$3799

C033 1011

CALL! FOR BEST PRICE

CANON MINI DV CAMCORDERS

C033 1013	ZR-10 MINI DV	$799
C033 1012	OPTURA PI MINI DV	$1,299
C033 1017	ELURA2 MC MINI DV	$1,399
C033 1016	ELURA2 10X/40X MINI DV	$1,199
C033 1010	GL1 3-CCD 20X/100X DV	$2,299
C033 1011	XL1 PROFESSIONAL DV	$3,799

DIGITAL CAMERAS

NIKON COOL PIX 880

Front

N043 1018

$699

Back

All Digital Cameras below are USB

NIKON

N043 1010	COOLPIX 800 2.1 MP	$549
N043 1018	COOLPIX 880 3.34 COMPACT	$699
N043 1012	COOLPIX 990 3.34 MP	$929

CANON

C033 1006	POWERSHOT S10 2.1 MP	$499
C033 1014	POWERSHOT S20 3.34 MP	$699
C033 1015	POWERSHOT ELPH S100 2.1 MP	$599

EPSON

E043 1041	PHOTOPC 3000Z 3.34 MP	$899

USB PERIPHERALS

macally

USB

New!

GAME CONTROLLERS

AirStick

USB
Mid Air
Programmable
Joystick

$49.95

M450 1053

MORE GREAT MACALLY ITEMS!!!

iWebKey	$99.95
iMediaKey	$57.95
iHub7	$57.95
iOptiNet Mouse	$29.95
iShock	$23.95

KENSINGTON

New!

only $39.99

K015 1093

USB

Mouse in a Box®

Optical Pro USB/PS/2

- New optical sensor + no moving parts to clean!
- Four programmable buttons and a scroll wheel-Mouse Works software

New!

TurboMouse™–USB/ADB

Four extra-large buttons are easy to click, comfortable to use Free high-powered software saves time by reducing repetitive tasks
Now ADB and USB!

USB K015 1003 TurboMouse USB/ADB.... $99.99

TurboRing™ Trackball

- New! State-of-the-art scrolling system!
- Large ball for easy fingertip control
- 3 customizable buttons deliver one-click solutions

USB K015 1088 TurboRing USB $69.99

SOFTWARE

AWESOME UTILITIES!

ALADDIN
StuffIt Deluxe V6.0 ..... $29.95*

CASADY& GREENE
Conflict Catcher V8.0 ..... $72.95

CONNECTIX
Virtual PC V3.0 Win 98 ..... $179.95

MICROMAT
TechTool Pro V3.0.2 ..... $89.95

SYMANTEC
Norton AntiVirus V7.0 ..... $39.95*
Norton Utilities V6.0 ..... $49.95*

GREAT GRAPHICS TOOLS!

ADOBE
Illustrator V9.0 upgrade $139.95
Photoshop V6.0 upgrade $189.95

MACROMEDIA
Flash V5.0 upgrade $149.95
Freehand V9.0 upgrade $149.95

QUARK
QuarkXPress V4.1 ..... $765.95

*Price shown after rebate. Call for details

HOT HOLIDAY GAMES!

Alpha Centauri	$29.95
Baldur's Gate	$46.95
ChessMaster 6000	$35.95
Diablo II	$59.95
Deus Ex	$39.95
F/A-18 Korea Gold	$29.95
Fly 2K	$29.95
Madden NFL 2000	$19.95
Majesty	$39.95
Quake III	$49.95
Rainbow Six	$39.95
SimCity 3000	$49.95
Sin Gold	$29.95
Star Wars Racer	$19.95
The Sims	$49.95
Tomb Raider IV	$39.95
Unreal Tournament	$39.95
Virtual Game Station	$19.95*

*Price shown after rebate. Call for details

New! iMacs

$799†

FREE† 64MB

350Mhz iMac

A102 1877 350MHz **Indigo** iMac
64MB/7GB HD/24x CD-Rom/56k modem.

400Mhz iMac DV

FREE† 64MB

$995†

A102 1870 Indigo iMac DV 400MHz/64MB 10GB HD/24x CD-ROM/56k modem.

A102 1871 Ruby iMac DV 400MHz/64MB 10GB HD/24x CD-ROM/56k modem.

†Free 64MB ram valid only on 350Mhz and 400Mhz iMacs listed on this page. Offer expires 1/8/00 or while supplies last. $30 installation fee applies to the free ram offer.

450Mhz iMac DV+

$1295†

FREE† 128MB

A102 1872 Indigo iMac DV + 450MHz/ 64MB/20GB HD/DVD-ROM/56k modem.

A102 1873 Ruby iMac DV + 450MHz/ 64MB/20GB HD/DVD-ROM/56k modem.

A102 1874 Sage iMac DV + 450MHz/ 64MB/20GB HD/DVD-ROM/56k modem.

500Mhz iMac DV SE

$1495†

FREE† 128MB

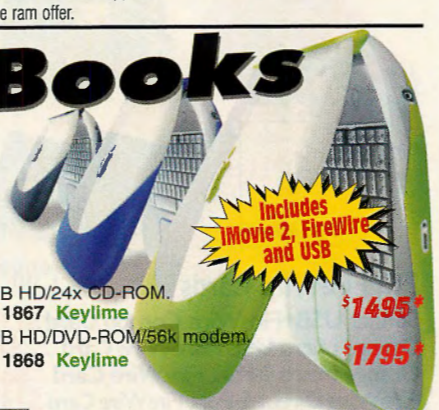
A102 1875 Graphite iMac DV SE 500MHz/128MB/30GB HD/DVD-ROM /56k modem.

A102 1876 Snow iMac DV SE 500MHz/128MB/30GB HD/DVD-ROM /56k modem.

†Free 128MB ram valid only on 450Mhz and 500Mhz iMacs listed on this page. Offer expires 1/8/00 or while supplies last. $30 installation fee applies to the free ram offer.

New! iBooks

466MHz Starting At $1495



Includes iMovie 2, FireWire and USB

366MHz iBook/64MB RAM/10GB HD/24x CD-ROM.
A102 1859 Indigo **A102 1867 Keylime** $1495*

466MHz iBook/64MB RAM/10GB HD/DVD-ROM/56k modem.
A102 1860 Graphite **A102 1868 Keylime** $1795*

FREE* 64MB

*$30 Installation fee. Applies on all iBook Memory Offers. Expires 1/8/00. Offer valid on all iBooks listed on this page.

NO SURCHARGE

SOURCE CODE 62011

ClubMac®

ORDER TODAY! 24 HOURS A DAY 7 DAYS A WEEK

1-800-217-9208

ORDER ON-LINE

WWW.CLUBMAC.COM

Sales
24 Hours a Day, 7 Days a Week ..(800) 217-9208
Customer Service
M-F 6am-7pm, Sat. 8-12 Noon PST (800) 551-6398
Inquiries & International Sales
24 Hours a Day, 7 Days a Week ..(949) 768-8130

24-Hour Fax.....(949) 768-9354

Corporate/Educational Sales
M - F 6am - 6pm PST.....(800) 258-2621
Technical Support
M - F 6am - 6pm PST.....(800) 854-6227

E-Mail: ClubMac Sales .....cmsales@clubmac.com
Customer Service ....custsvc@clubmac.com
Technical Support....techsup@clubmac.com

Mail: ClubMac.....7 Hammond, Irvine, CA 92618

School/University/Government/Corporate Purchase Orders Gladly Accepted (subject to credit approval)

New at Other World!

OPEN MON.- FRI.: 8:30AM- 8:00PM & SAT.: 10AM-4 PMCST

Other World Computing

SERVING THE MAC UNIVERSE SINCE 1988

VISA MasterCard AMERICAN EXPRESS DISCOVER C.O.D.

800-275-4576

SAVE @OWC

EXCELLENT SERVICE | COMPETITIVE PRICES | QUALITY PRODUCTS | WEEKLY EMAIL SPECIALS!

Check Out www.btomacs.com

SPECIALS

Now hook up another monitor* for only $39.95

Video Card SPECIAL!

SAVE @OWC

ixMicro
Ultimate Rez 128
PCI 2D/3D Video
With 8mb VRam and 1 year Warranty
*monitor not included!

Add up to 4 IDE Drives to any PCI G3 PowerMac

Sonnet Tempo ATA/66 PCI Card
Connect up to 4 IDE Hard Drives to your system.
Fast- Up to 66mb/s!
Easy- Just plug and play!
Affordable- 30gb IDE only $139!
Includes 12" IDE Cable and 3 Year Warranty.

$99.95 SAVE @OWC

MEMORY

SAVE @OWC

SAVE BIG on OWC and Techworks Memory at Other World Computing!

LIFETIME WARRANTY

PC100 2-2-2
SoDimms for iBook, iMac 233/266/333 and G3 PowerBook

32 MB	$28.75	64 MB	$43.50
128 MB	For PBook 2000 FireWire (Pismo) & iBooks ONLY		$82.75
128 MB			$89.99
256 MB	For PBook 2000 FireWire (Pismo) ONLY		$175.25
256 MB			$183.75
512 MB	For PBook 2000 FireWire (Pismo) ONLY		$399.95

PC100 2-2-2 **SDRAMs for PowerMac G3/G4, G4 Cube & iMac 350-500**
Also compatible with most Intel/AMD PCs using SDRam memory.

LIFETIME WARRANTY

32MB	$27.99	64MB	$41.75	128MB	$72.98
256 MB	For AGP/Sawtooth G4, G4 Cube & iMac 350-500 ONLY				$162.99
256 MB					$167.50
512 MB	For AGP/Sawtooth G4, G4 Cube & iMac 350-500 ONLY				$395.98

PC 133Mhz. SDRAM

64 MB	$49.99
128 MB	$77.25
256 MB	$174.95

CD / CDR / DVD

CD-Rom Drives in stock from only:	$17.50
CD-RW Drives in stock from only:	$154.95
DVD Drives start at only:	$252

Visit our website or call for our full line!

Yamaha SCSI CD-RW
8x Recordable/ 8x Re-Writable/ 24x Read Only $249.00 int. / $297.99 ext.
External Version includes Toast 4.1.x, Power and SCSI Cable - Complete Kit

Yamaha IDE CD-RW
8x Recordable/8x Re-Writable/24x Read Only $184.95

OWC Mercury Yamaha FireWire CD-RW
8x8x24x External Solution w/Toast. $324.95 ext
FireWire Ext. includes Toast 4.1.x, Power & FireWire Cables - Complete Kit

LAPTOP DRIVES

PowerBook Hard Drives
for iBook, PowerBook G3, 1400/5300/ 190/150 Duo 2300/2400

SAVE @OWC

810Mb Apple ROM 12mm w/2 Year Warr.	$35
6 GB IBM Travelstar 4200rpm 9.5mm	$149.95
10.0GB IBM Travelstar 12mm	$189.95
12.1GB Toshiba 9.5mm	$208.95
12.1GB IBM Travelstar 9.5mm	$207.50
20.0GB IBM Travelstar 9.5mm	$278.95
30.GB IBM Travelstar 12mm 2Mb Cache Buffer	$494.95

** some computers require slim model 2.5" Drives

FIREWIRE

Let Your legacy Mac use FireWire today!

FireWire

SONNET SIMPLY FAST

PCI FireWire Cards

Sonnet USB+FireWire Combo Card	$137.95
Orange Micro USB+FireWire Card	$139
Orange Micro 2-Port FireWire Card	$68.95
FireWire Direct 5-Port FireWire Card	$137.95

FireWire For LapTops As Well
Newer FireWire 2 Go PCMCIA Card for PowerBook G3 Series $75
FireWire Card for PBook G3 Series $129

OWC FireWire Hard Drives

Cables, Software and 3-Year Warranty Included

FireWire

OWC Mercury FireWire Drives feature quality design with the fastest FireWire bridge available.

OWC Mercury FireWire Drives
5400 RPM 9-9.5ms Access Time w/Cables & Software

20GB	$242.95	40GB	$309.99
60GB	$384.95	80GB	$459.75

OWC MercuryPro FireWire Drives
7200 RPM <9.ms Access Time w/Cables & Software

20GB	$278.95	30GB	$307.99
40GB	$372.95	60GB	$519.95
75GB	$679.99		

OWC External FireWire Drive Case
3.5"/5.25" Universal $159

Accepts any standard IDE 3.5" Drive and Includes FireWire Cable, power cord, and driver software.

MAXTOR FIREWIRE DRIVES

FireWire External Solutions

40GB Maxtor 5400 FW Drive	$279.95
80GB Maxtor 5400 FW Drive	$399.95

Maxtor

FireWire

SAVE @OWC

OWC FireWire SPECIAL

Buy any OWC Mercury FireWire Product and get a PCI FireWire 2 Port ieee1394 controller for only $54.95

Other World Computing
224 West Judd St., Woodstock, IL 60098
International: (815) 338-8685
Fax: (815) 338-4332

AD01-01

Prices, Specifications, and Availability subject to change without notice. Items returned complete in original returned within 30 days may be subject to up to a 15% restocking fee. No return will be accepted without Return Merchandise Authorization Number.

Other World Computing

School/University/Government/Corporate Purchase Orders Gladly Accepted (subject to credit approval)

GO TO www.macsales.com

OPEN MON.- FRI.: 8:30AM- 8:00PM & SAT.: 10AM-4 PMCST

other World Computing

SERVING THE MAC UNIVERSE SINCE 1988

E-MAIL: OWC@MACSALES.COM

VISA MasterCard AMERICAN EXPRESS DISCOVER C.O.D.

800-275-4576

FAST EASY & SECURE!

EXCELLENT SERVICE | COMPETITIVE PRICES | QUALITY PRODUCTS | WEEKLY EMAIL SPECIALS!

OnLine Orders $5.00* FedEx Federal Express Ship FedEx

SAVE @OWC

OWC

YOUR SOURCE FOR

MemoryHardDrivesUpgrades

LEGACY MAC MEMORY

168 PIN DIMM (2k Refresh 70 or 60ns (specify))	5V	EDO 5V
8MB	$8.45	N/A
16MB	$43.75	N/A
32MB	$58.95	$76.95
64MB	$129.95	$129.95
128MB	$157.99	$157.99

72 PIN SIMM (2k Refresh 60ns)	
16MB	$26.95
32MB	$59.50
32MB (4k Refresh 60ns)	$37.50

Call for current RAM Prices 1-800-275-4576

30PIN SIMM 4 MB $12
Works with legacy Macs like the IIsi, Quadra, SE30, Classic, etc.

SAVE @OWC

Mac Video RAM

256k	PMac 7100/Quadra800/650	$16.75
512k	PMac 8100/Quadra's/LC's	$22.75
1MEG	PMac 72/73/75/76/85/8600 & Compat.	$28.95
4 MEG	G3 Video SGRAM	$13.95

Sonnet ZIF Upgrades

G3/G4 ZIFs for carriers or ZIF Mac Systems

SONNET SIMPLY FAST

G3/500 Mhz. 1024k 2:1 $397.95

G4/400 Mhz. AltiVec with 1mb $495

G4/500 Mhz. AltiVec with 1mb $789

SPECIALS

$99.95

4.3GB Seagate Barracuda

True 50-pin Narrow Hard Drive

Seagate

Internal: $99.95

External: $159.95

External includes SCSI cable, power cable, terminator and formatting software.

9.1GB IBM UltraStar 7200rpm
UltraSCSI Low Profile...Int. $164.95 | Ext. $234.95

30GB Maxtor DiamondMax 5400rpm
ATA/100 IDE $139.95

61GB IBM DeskStar GXP 7200rpm
ATA/100 IDE $379.75

81GB Maxtor DiamondMax 5400rpm
ATA/100 IDE $329.95

See our website or call for full line of IDE and SCSI Hard Drives

GameWizard Voodoo II

8mb Video Card

SAVE @OWC

OWC EXCLUSIVE

Add real gaming power to any Rev.A or Rev.B 233/266mhz iMac computer

$84.95

OWC MERCURY ZIF UPGRADES

ZIF UPGRADES For As Low As $35.00

SAVE @OWC

For Beige G3/All in One G3/Blue & White G3s

G3/266 Mhz. 512k Cache 2:1	$35.00
G3/300 Mhz. 512k Cache 2:1	$74.95
G3/450 Mhz. 1024k Cache 2:1	$257.95

For 73/75/76/85/86/95/9600s & Compatible Clones

G3/300 Mhz. ZIF w/ XLR8 ZIF Carrier	$175.00
G3/500 Mhz. ZIF w/ XLR8 ZIF Carrier	$514.95

Call or see our website for more Mercury ZIF Products.

www.macsales.com

OWC ONLINE

SONNET G3/G4 UPGRADES

Nubus Series Upgrades

Upgrade Your 6100/7100/8100/8150/9150/ Radius; Performa 611X Series

G3/250 Mhz. 512k 2:1	$198
G3/257-266 Mhz. 1024k 2:1	$245
G3/292-300 Mhz. 1024k 2:1	$295
G4/270-360 Mhz. 1024k 2:1	$495

Turn Your 6500 into a fire-breathin' G3/500

Banker Series Upgrades

4400/5500/6360/6400/6500/20th Anniv. Mac; PowerBase; Umax C500/600 StarMax 3000/ 4000/5000 Series; Most Motorola Clones

G3/350 Mhz. 512k 2:1	$247.50
G3/400 Mhz. 512k 2:1	$295
G3/400 Mhz. 1024k 2:1	$348.95
G3/500 Mhz. 1024k 2:1	$589

Sonnet has a G3/G4 Solution for Almost Any Mac! Call for details

SONNET SIMPLY FAST

G3/375Mhz PCI 512k 2:1 $199

New from Sonnet

G3/500Mhz PCI 1024k 2:1 $395.97

For PCI Series sytems listed below

SAVE @OWC

PCI Series Upgrades

Upgrade Your 7300/7500/7600/8500/8600/ 9500/9600s; WGS 7350/8550/8650/9650; PowerCenter/Wave/Tower; UMax S900/J700

G3/400 Mhz. 512k 2:1	$249
G3/400 Mhz. 1024k 2:1	$295
G4/350 Mhz. AltiVec 1mb	$385
G4/400 Mhz. AltiVec 1mb	$495
G4/450 Mhz. AltiVec 1mb	$595

AD01-01

OWC ONLINE ALWAYS OPEN!

24 / 7 / 365

EASY/SAFE/SECURE

4.5 STAR MERCHANT

BizRate Gold 4.5 Star Merchant

$5 FEDEX SHIPPING*

VERISIGN SECURITY

OnLine Orders $5.00* FedEx Federal Express Ship FedEx

AUTHENTIC VeriSign SITE

*$5 FEDEX AVAILABLE FOR ONLINE ORDERS ONLY

http://shop.macsales.com/list/list.taf

JOIN THE OWC SPECIALS EMAIL LIST TO BE AWARE OF ALL OWC HOT DEALS!

Other World Computing
224 West Judd St., Woodstock, IL 60098
International: (815) 338-8685
Fax: (815) 338-4332

Prices, Specifications, and Availability subject to change without notice. Items returned complete in original returned within 30 days may be subject to up to a 15% restocking fee. No return will be accepted without Return Merchandise Authorization Number.

other World Computing

Providing:
- Selection
- Service
- Support
- Satisfaction

Serving:
- Business
- Government
- Education
- Home

Why choose MacWarehouse?

- **We've been dedicated to Mac aficionados from the beginning.** We launched our first print catalog in 1987— ever since then we've been providing our customers with the Apple products, software and peripheral products they want and need.
- **We have the products you're looking for.** MacWarehouse has been the #1 source for Mac computer solutions for 13 years! Whether it's a new iMac, extra memory, software or peripherals, MacWarehouse is ready to supply you with top name brand products.
- **We provide expert support and services.** MacWarehouse has 80+ tech specialists on hand to assist you with a broad range of custom configuration questions, networking issues and integration services.

Plus...

- Personal Account Managers and Support Teams
- A Wide Choice of Delivery Options
- Software Licensing Programs
- Flexible Business Leasing Terms
- Easy Monitoring of Your Account with New Online Tools
- Expert Custom-Configuration of Laptops, Desktops and Servers
- Fast Bid, Quote and RFP Response

Our cross-platform **Tech Support Specialists** assist you with:

- Systems Questions
- Selecting the Best Products and Services
- Custom-configuration of Desktops, Laptops and Servers

We accept these major credit cards:

MasterCard VISA American Express Cards DISCOVER NOVUS

A Micro Warehouse Company

MacWAREHOUSE®

Your #1 Source for Mac™ Computer Solutions!

Power Mac G4

with 450 or 500MHz Dual G4 Processors

Authorized Reseller

FREE‡ Up to 128MB RAM UPGRADE

The dual processor Power Mac G4s deliver twice the firepower of previous G4s, enabling you to race through large image rendering, build dynamic Web sites, and even do professional-level video editing. These are the machines you want when running Adobe Photoshop, InDesign, and QuarkXPress. Call to order yours today!

FREE* 64MB RAM UPGRADE Ask for item numbers AAP1154 and INSTL10.

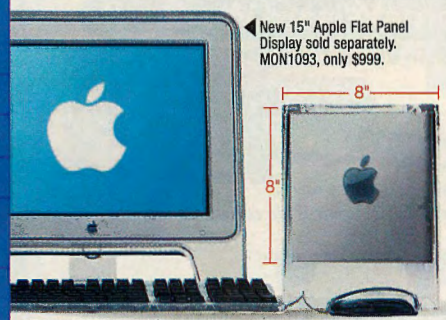
400MHz/G4 processor (single processor)
64MB SDRAM (exp. to 1.5GB)/20.0GB Ultra ATA/66 Hard Drive/1MB Backside Level 2 Cache/DVD-ROM Drive/56K Modem†/1GB Ethernet
CPU1646 ..... $1599

FREE‡ 128MB RAM UPGRADE Ask for item numbers AAP1155 and INSTL10.

450MHz/G4 Dual-processor
128MB SDRAM (exp. to 1.5GB)/30.0GB Ultra ATA/66 Hard Drive/1MB Backside Level 2 Cache per processor/DVD-ROM Drive/56K Modem†/1GB Ethernet
CPU1647 ..... $2499

FREE‡ 128MB RAM UPGRADE Ask for item numbers AAP1155 and INSTL10.

500MHz/G4 Dual-processor
256MB SDRAM (exp. to 1.5GB)/40.0GB Ultra ATA/66 Hard Drive/1MB Backside Level 2 Cache per processor/56K Modem†/1GB Ethernet
CPU1637: with DVD-ROM $3199
CPU1648: with DVD-RAM..... $3499



New 15" Apple Flat Panel Display sold separately. MON1093, only $999.

Power Mac G4 Cube

Miraculously engineered to fit into an 8-inch cube and suspended in a crystal-clear enclosure, the built-in Velocity Engine helps the G4 processor reach speeds of more than one billion calculations per second.

Power Mac G4 Cube 450MHz
450MHz PowerPC G4 Processor/64MB SDRAM/20.0GB Ultra ATA/66 HD/DVD-ROM Drive/56K modem†/Harman Kardon Speaker System
CPU1657 ..... Business Lease only $52/mo.§ ..... $1499* after $300 rebate

***Price AFTER Apple $300 mail-in rebate when purchased with qualifying Apple monitor.** Price before rebate is $1799. To qualify for rebate, customer must purchase one Power Mac G4 Cube (CPU1657) and one Apple monitor listed below (MON1093, MON1094, MON1095). Offer valid on purchases made from 10/13/2000 through 12/31/2000. Offer not valid on purchase of reconditioned equipment. Visit www.warehouse.com/rebate/apple for manufacturer's mail-in rebate coupon or call us at 1-800-390-0706 to request one.*

NEW 17" Apple Studio Display

17" (16" viewable) Natural Flat Diamondtron CRT/Resolutions up to 1600 x 1200 @ 65Hz

Item #MON1094 ..... $499

NEW 15" Apple Flat Panel Studio Display

15" viewable size/ 16.7 million colors/ resolutions up to 1024 x 768 pixels/ Theater Mode automatically brightens screen for optimal movie viewing

Item #MON1093 ..... $999
Business Lease only $29/mo.§

NEW 22" Apple Cinema Display

22" viewable size/ Superthin 8.3" (min.) design/ resolutions up to 1600 x 1024 pixels

Item #MON1095.... $3999
Business Lease only $116/mo.§

Our sales representatives are ready to take your order 24 hours a day, 7 days a week. We accept most major credit cards. We offer overnight delivery to most areas for in-stock items ordered weekdays up to 12:00 midnight (EST) (or 11:00 pm (EST) if ordered via warehouse.com). CT, IL, NJ, OH, and TN residents, please add applicable sales tax. Shipping and handling charges apply.

Please contact one of our sales representatives or visit the Customer Service section of our web site at warehouse.com. to review our 30-day defective product return policy. Certain products must be returned directly to their manufacturers. Micro Warehouse is not responsible for any typographical or photographic errors in this advertisement. Prices, policies and item availability are subject to change at any time.

Manufacturer's warranties apply and therefore Micro Warehouse makes no product warranty, either expressed or implied, including without limitation, any warranty of merchantability or fitness for a particular purpose.

Copyright© 2000 Micro Warehouse, Inc. All rights reserved. All product names and images throughout this advertisement are trademarks or registered trademarks of their respective holders.

† Capable of receiving data up to 56Kbps. Actual send and receive speeds may vary.

Order online at: www.warehouse.com

Your #1 Online Source for Top Brand Computer Products!

Sign up for your own customized Online Ordering Center at:
CorporateAdvantage.Warehouse.com

Apple iMac

Now Faster Than Ever!

FREE*64MB RAM UPGRADE with the purchase of any iMac!
Ask for item numbers AAP1150 and INSTL10.

Apple iMac 350MHz

This entry-level iMac is the one you want for surfing the Internet. You get a faster processor, a bigger hard drive and a Harman Kardon Odyssey Audio System!

350MHz PowerPC G3 processor/64MB SDRAM/7.0GB hard drive/24X max. variable CD-ROM Drive/56K Modem†

Only $799

Indigo: CPU1649

Indigo — also available in 400MHz and 450MHz

Apple iMac DV 400MHz

The iMac DV takes you beyond the Internet and into the home movie business featuring iMovie 2!

400MHz PowerPC G3 processor/ 64MB SDRAM/10.0GB hard drive/ 24X max. variable CD-ROM Drive/ 2 FireWire ports/iMovie 2/56K Modem†

Only $999 each

Indigo: CPU1650 *also available in 350MHz and 450MHz*

Ruby: CPU1651 *also available in 450MHz*

Apple iMac DV+ 450MHz

450MHz PowerPC G3 processor/ 64MB SDRAM/20.0GB hard drive/ DVD-ROM Drive/2 FireWire ports/ iMovie 2/56K Modem†

Only $1299 each

Indigo: CPU1652 Ruby: CPU1653 Sage: CPU1654

Apple iMac DV Special Edition 500MHz

500MHz PowerPC G3 processor/ 128MB SDRAM/30.0GB hard drive/ DVD-ROM Drive/2 FireWire ports/ iMovie 2/56K Modem†

Only $1499 each

Snow: CPU1656 Graphite: CPU1655

FREE‡128MB RAM UPGRADE!
With the purchase of any PowerBook! Ask for item numbers AAP1156 and INSTL10. Installation fee required.

FREE‡64MB RAM UPGRADE!
With the purchase of any iBook! Ask for item numbers AAP1157 and INSTL10. Installation fee required.

Apple PowerBook G3 400MHz G3 processor

64MB SDRAM/10.0GB HD DVD-ROM Drive/56K Modem† 14.1" Active-Matrix Display

Item #CPU1641 ..... $2299††

500MHz G3 processor

128MB SDRAM/20.0GB HD/ DVD-ROM Drive/56K Modem† 14.1" Active-Matrix Display

Item #CPU1642 ..... $3299††

Apple iBook G3 366MHz G3 processor

64MB SDRAM/10.0GB HD/24X max. variable CD-ROM Drive 56K Modem†/12.1" Active-Matrix Display

Indigo: Item #CPU1643,
Key Lime: Item #CPU1658.....Only $1499

466MHz G3 processor — Special Edition

64MB SDRAM/10.0GB HD/DVD-ROM Drive/ 56K Modem†/12.1" Active-Matrix Display

Graphite: Item #CPU1644,
Key Lime: Item #CPU1659 ..... $1799

iMac PC100 Memory

100MHz SDRAM for 350MHz and faster iMacs.

128MB only $199.95

Item #CHP1039

Memory prices subject to change.

Call for latest pricing.

Lexmark Z52 Jet Printer

Only $179.95

Item #PR16221

- 15ppm black, 7ppm color
- Up to 2400 x 1200 dpi

LEXMARK USB

Black Ink Cartridge: item #PR12829, only $36.95.

Power Mac G4 400MHz

Only $1299

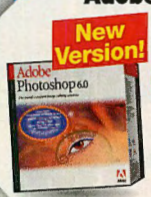
Item #CPU1574

While supplies last.

- 64MB SDRAM
- 10.0 GB hard drive
- DVD-ROM

Free memory offers do not apply.

Adobe Photoshop 6.0



Upgrade for only $179.95

Item #UPG1306

Adobe Photoshop 6.0 Full Version: item #GRA3486, only $599.95.

Adobe

Microsoft Office 2001

Upgrade for only $259.95

Item #VW74556

Microsoft Mac Full Version VW74557 ..... $429.95

Ownership of any prior version of Office, Word, Excel or PowerPoint is required for upgrades.

CALL FOR A FREE COLOR CATALOG!

††Price AFTER Apple $200 mail-in rebate. Qualifying PowerBook must appear on invoice. Offer valid on purchases made between 10/13/00 and 12/31/00. Visit www.warehouse.com/rebate/apple for mail-in coupon or call us at 1-800-390-0706 to request one. Offer not valid on purchase of reconditioned PowerBooks. Offer good while supplies last.

*Free 64MB RAM with any new iMac, iBook or Power Mac G4/400 20GB HD. Free 64MB RAM upgrade AFTER MacWAREHOUSE $100 mail-in rebate. Price before rebate is $129.95. Installation fee of $29.95 is required. Rebate coupon is available at www.warehouse.com/rebate/macwarehouse or call us at 1-800-390-0706 to request one. Offer not valid on the purchase of Tangerine iBook, reconditioned iBooks, reconditioned iMacs or reconditioned Power Macs . Offer expires 12/25/00. MacWAREHOUSE reserves the right to terminate this offer at any time.

‡Free 128MB RAM with any PowerBook or Power Mac Dual Processor. FREE 128MB RAM AFTER MacWAREHOUSE $200 mail-in rebate. Price before rebate is $229.95. Installation fee of $29.95 is required. Rebate coupon is available at www.warehouse.com/macwarehouse or call us at 1-800-390-0706 to request one. Offer not valid on purchase of reconditioned Power Books or Power Macs. Offer expires 12/25/00. MacWAREHOUSE reserves the right to terminate this offer at any time.

§Leases are only available to business customers with approved credit on product orders where at least one product totals $750 or more. Lease payments are based on a 48-month Lease. Call today to see how you can qualify. Lease terms are subject to change.

1-800-981-9193

GET EXPRESS DELIVERY OVERNIGHT!

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! CANADA ORDERS CALL: 1-800-603-5139

ONLINE: www.warehouse.com/ma

Get your order the next business day — *call for in-stock* items weekdays by midnight[ET] or order online by 11:00[ET].*

*Products must be in stock in our Wilmington, Ohio Distribution and Configuration Center.

MacMall

Everything and Anything for Your Mac and More!

SAVE $300!

Plus 64MB RAM FREE!

Authorized Reseller

- 450MHz PowerPC G4 Processor
- 1MB of backside level 2 cache
- 64MB SDRAM (supports up to 1.5GB)
- 20GB Ultra ATA/66 HD
- DVD-ROM drive with DVD playback
- ATI RAGE 128 Pro graphics card with 16MB of graphics memory

FREE Extra 64MB RAM!
No Mail-In Rebate Required!
Free 64MB RAM upgrade with purchase of Power Mac G4 Cube (952691). Professional installation fee of $30 required. Offer expires 1/8/01.

Apple Power Mac G4 Cube
only $1,494* #952691
*Price after $300 Apple mail-in rebate when purchased with a qualifying Apple Display. See side bar for details.

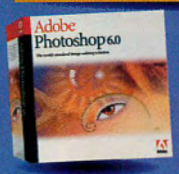
With FREE 64MB!
Own this Power Mac G4 Cube for as low as $50/month with the *New MacMall EZ Payment Plan!*

Just Announced!

$300 Apple Rebate!

Purchase the Power Mac G4 Cube with any Apple display shown below and get $300 back direct from Apple! For additional details go to www.macmall.com/applerebates or call your Account Executive now!

Hot Software!



Photoshop 6.0
upgrade now only
$178.99 #951597
Sys. req.: PPC, 24MB RAM, 30MB HD

Dreamweaver 4 for Mac
upgrade only
$139.99 #953697

New! Office 2001: Mac Edition
upgrade for only
$254.99 #849861

#849799 Office 2001: Mac Edition *Full Version* $425.99
as low as $325.99 if purchased w/iMac or iBook

MacMall EZ Payment Plan!

NEW! Payment terms up to 48 months!

Now you can have low fixed monthly payments on consumer purchases of $750 or more with the new MacMall EZ Payment Plan. It's fast and easy to apply for, and there are no application fees or prepayment fees. Call your Account Executive today, or apply online! You can complete your purchase in just minutes—and have your order tomorrow!

Financing available on approved credit arranged through MBNA America Bank, N.A. Payment does not include shipping charges and sales taxes if applicable. Estimated monthly payment is based on approximate 48-month term at an Annual Percentage Rate (APR) of 14.99%. Your APR may be higher. There are no transaction fees for MacMall purchases billed directly to your account. There is a transaction fee of 3% of the U.S. Dollar amount of each advance check you write ($5 min/$30 max), but there is no obligation to use advance checks.

Advanced Display Technology!

Apple 22" Flat Panel Cinema Display
your price
$3,999 #951070

New 17" Apple® Flat Screen Studio Display
your price $499 #951071

New Apple 15" Flat Panel Studio Display
your price
$999 #950991

FREE Memory with Every iMac!

FREE Extra 64MB RAM!
No Mail-In Rebate Required!
**No Mail-In Rebate Required. Free 64MB RAM upgrade with purchase of iMac DV+ (952684, 952682 and 952685) or iMac Special Edition (952686 and 952687). Professional installation fee of $30 required. Offer expires 1/8/01.

**After $100.00 MacMall mail-in rebate. Applies only to purchases of iMac 350 Indigo (953100) and iMac DV (952680 and 952681) purchased between 9/21/00 and 1/8/01 and subject to product availability. Price before rebate of the RAM is $100.00 plus $30 installation. All requests must be postmarked 15 days from invoice. Offer not valid with any other offers, rebates, discounts or promotions. Please allow 6 to 8 weeks after claim is received by MacMall to receive your rebate. MacMall reserves the right to amend the rules, alter the rebate amount, or cancel this offer at any time without prior notification. MacMall is not responsible for lost or misdirected mail and illegible entries. Download your coupon by visiting www.macmall.com/imacrebate for mail-in rebate coupon.

Order	Color	MHz	RAM	FREE RAM	Total RAM	Hard Drive	Drive	USB Ports	FireWire Port	Airport Ready	Price	as low as	Rebate
#953100	Indigo	350MHz	64MB	64MB	128MB	7GB	CD	2	No	No	$799	$23	mail-in**
#952681	Indigo	400MHz	64MB	64MB	128MB	10GB	CD	2	2	Yes	$999	$28	mail-in**
#952680	Ruby	400MHz	64MB	64MB	128MB	10GB	CD	2	2	Yes	$999	$28	mail-in**
#952684	Indigo	450MHz	64MB	64MB	128MB	20GB	DVD	2	2	Yes	$1,294	$37	no mail-in*
#952685	Ruby	450MHz	64MB	64MB	128MB	20GB	DVD	2	2	Yes	$1,294	$37	no mail-in*
#952682	Sage	450MHz	64MB	64MB	128MB	20GB	DVD	2	2	Yes	$1,294	$37	no mail-in*
#952686	Snow	500MHz	64MB	64MB	128MB	30GB	DVD	2	2	Yes	$1,494	$42	no mail-in*
#952687	Graphite	500MHz	64MB	64MB	128MB	30GB	DVD	2	2	Yes	$1,494	$42	no mail-in*

Order Any Item in 4 Easy Steps
1. Go to www.macmall.com
2. Click on "Shopping Cart"
3. Enter part# in "Catalog Express"
4. Click on "Proceed to Checkout"

CATALOG EXPRESS

macmall.com 1-800-965-3282

SAVE $200!
Plus 128MB RAM FREE!

Authorized Reseller

Includes iMovie 2!

FREE Extra 128MB RAM!
No Mail-In Rebate Required!
Free 128MB RAM upgrade with purchase of PowerBook 400 450DP (952730) and PowerBook 500 (952731). Professional installation fee of $30 required. Offer expires 1/8/01.

PowerBook G3 only $2,294* #952730
*Price after $200 Apple mail-in rebate.

Order	MHz	RAM	FREE	Total RAM	Hard Drive	Drive	Modem	Networking	Price	as low as
#952730	400MHz	64MB	128MB	192MB	10GB	DVD	56K	100Base-T	$2,294*	$45/mo.
#952731	500MHz	128MB	128MB	256MB	20GB	DVD	56K	100Base-T	$3,294*	$50/mo.

FREE Memory with Every iBook!

Includes iMovie 2!

iBook
starting as low as
$1,494 #952732

FREE Extra 64MB RAM!
No Mail-In Rebate Required!
Free 64MB RAM upgrade with purchase of Graphite iBook Special Edition (952733), Key Lime iBook Special Edition (953973), Key Lime iBook (953971) and iBook Indigo (952732). Professional installation fee of $30 required. Offer expires 1/8/01.

Order	Color	MHz	RAM	FREE RAM	Total Memory	Hard Drive	Drive	USB Ports	FireWire Ports	Airport Ready	Price	as low as
#952732	Indigo	366MHz	64MB	64MB	128MB	10GB	CD	1	1	Yes	$1,494	$45
#953971	Key Lime	366MHz	64MB	64MB	128MB	10GB	CD	1	1	Yes	$1,494	$45
#952733	Graphite	466MHz	64MB	64MB	128MB	10GB	DVD	1	1	Yes	$1,794	$50
#953973	Key Lime	466MHz	64MB	64MB	128MB	10GB	DVD	1	1	Yes	$1,794	$50

Great Deals on the Products You Need!

Stylus Color 777i Printer
- 8ppm black; 6ppm color
- 2880dpi perfect picture printing
- Quick drying 4-color inks

EPSON

only $99.99 #953315

Astra 1220U Flatbed Color Scanner
- 600 x 1200 dpi resolution
- 36-bit color

UMAX

only $39.99* #52037
*Price reflects $30 mail-in rebate. Mfr. reconditioned.

Iomega Zip 250 USB Portable Drive
Compatible with all 100MB and 250MB Zip disks!
only $179.99 #52012

12x10x32 FireWire CD-RW Drive
Record, erase and rewrite CDs again and again at 12X write and 10X rewrite.
only $349.99* #951639
*After $30 rebate. Offer ends 1/15/01.

Order Any Time! Open 24 Hours! Order Today by 10pm EST—Get it Tomorrow by 10:30am!

macmall.com 1-800-965-3282
AOL Keyword: MacMall *Mention your Priority Code: #ZMAD111*

Hot Peripherals!

Nikon

CoolPix 990 Digital Camera
only $887.99 #57105

2.2GB USB External ORB Removable Media Drive

only $199.99 #44416

Canon

Canon ZR10
10X Canon zoom lens and powerful 200X digital zoom for extremely detailed shots.
only $779.95 #59847

Palm m100 Handheld
Keep track of all your appointments, addresses and to-dos. Even use it to jot notes as fast as with a pen and paper.

only $149.99 #951523

VideoFX Capture Card
Easily connect any video source to your Mac and capture, edit and print!
only $99.99 #56616

Diablo II
Discover the mysteries of Diablo II and return to the world of dark fantasy! Full multiplayer support, including Internet play.

only $44.99 #951075

Memory Upgrades

Upgrades for your Apple® PowerBook G3!

VIKING COMPONENTS

#57816	64MB PowerBook FireWire	$129.99
#57817	128MB PowerBook FireWire	$249.99
#57818	256MB PowerBook FireWire	$509.99

Have your RAM professionally installed by one of our factory-trained technicians for only $30. Ask for #2214. See page 7 or visit our Web site: macmall.com for more Viking memory. Prices are valid at time of press & are subject to change due to market fluctuations. Please call for most current pricing.

MacMall

Shop Formac!

Formac

Visit our website for the easiest and most convenient way to buy the best products for your Mac.
Or call us at 1-877-4Formac.

www.formac.com

Form+Function Line

Formac dvdram New!

The FireWire DVD RAM Solution for your Mac

- Incredible 9.4 GB data capacity at lowest cost per megabyte. Up to 100,000 ReWrite cycles!
- Ideal for desktop publishing, multimedia archiving and presentation
- FireWire interface, hot-swappable and bus powered
- Maximum data transfer rate of up to 22 MB per second makes it a removable hard drive!

See our website for the lowest price!

FDD 1010-0

FireWire

Formac cdrw New!

The FireWire CD-RW Solution for your Mac

- High performance 16x/10x/40x drive
- Burns complete 650MB disc in under 5 minutes!
- FireWire interface, hot-swappable and bus powered
- Fully compatible with all CD and DVD drives, and audio players
- Includes Adaptec Toast 4.11

See our website for the lowest price!

FDR 1010-0

FireWire

Professional Line

ProFormance 3 plus

The Fastest PCI Graphic Accelerator for your Mac. Now with ProCyber 3D Virtual Reality Glasses!

- Industry leading graphic acceleration for Macintosh platform only!
- Supports up to 2000 x 2000 True Color Resolution
- Optimized by DDC2B, ratio 4:3, 16:10, 16:9
- 300 MHz maximum pixel frequency
- Port connectivity with Open LDI SGI Flat Panel Module
- Supports QuickDraw, QuickDraw 3D, QuickTime, Open GL, MPEG and motion compensation for MPEG2
- Unique FontCache feature

Holiday Special!

Bundled with ProCyber 3D Glasses

Only $229

PNGA 94-3C

Award Winner!

More than 10 in the last year:

"Gives PhotoShop users a boost!" – 4Mice MacWorld 12-99

"The best-value graphics card on the market!" – MacUser 8-99

"The fastest card in the test. Test winner!" – MacUp 7-99

"By far the fastest 2D card I've ever used!" – MacGamers Ledge 4-00

"Amazing Performance. Its power will keep you happy!" – MacAddict 11-99

ProTV Stereo New!

The TV/FM Tuner and Video Capture PCI Card for your Mac

- Capture sound files, stills and QuickTime movies up to 30 frames per second
- Receive up to 125 TV channels while surfing the web or working on your finances
- Connect easily via antenna, cable, S-Video or Composite
- Includes Adobe Premier LE

Only $139

PNTV 42-0

ProRAID Lowest Price Ever!

16-bit Ultra Wide SCSI PCI Adapter for your Mac

- Superior Data Transfer Speed — Up to 80 MB with ProRAID II!
- Software optimized for Active Termination
- Bootable — Improve Start Up Performance

Award Winner!

"Very Good! Best Price Performance!" – MacUp 9-98

"Four Mice" – MacWorld 8-99

(See our website for complete award list.)

Only $69

PDAC 10-0

© 2000, Formac Electronic, Inc. Formac, Shop Formac!, Formac dvdram, Formac cdrw, ProFormance 3, ProFormance 4, ProG3, and ProTV Stereo are registered trademarks of Formac Elektronik GmbH and its subsidiaries in the US and in other countries where Formac products are sold or distributed. Other brands and names are the property of their respective owners.

Also available through mail order at ClubMac, MacWarehouse and Outpost.com; or at CDW, ComputerWare retail stores; and through Ingram. See our website for Education Institution prices.

WE BUY MACS AND MAC STUFF
(318) 424-9791

SHREVE SYSTEMS

WE STOCK MAC PARTS!

1-800-227-3971

For all of this and more check out our website!
http://www.shrevesystems.com

FAX (318) 424-9771 Technical Support (318) 424-7987
Customer Service (318) 424-9791 Purchasing (318) 424-9791
1200 Marshall st Shreveport, Louisiana 71101

PowerBook 5300cs

- Supports ext. video
- 24MB RAM
- 750 Hard Drive
- 100-MHz 603e
- Dual-scan color
- Refurbished

ONLY $499

ADD 56K PCM/CIA MODEM FOR ONLY $100 MORE!

MacintoshLC580

Internet Ready! $249

- 33-MHz MC68LC040
- 8MB of RAM
- 800MB Hard Drive
- 28.8 Motorola Modem

Last Chance Blowout!

$299 with internal 4XCD

Color LaserWriter 12/600PS

- 600-dpi
- 12 ppm
- Color Photograde
- LocalTalk, Ethernet
- Mac, DOS, Unix or Windows
- Toner included

Refurbished ... $1299

The Vintage Mac Superstore!

ONLY $299

NEW!

Apple 17" Studio Display

PowerComputing 17" Monitor ONLY $169!

Factory Refurbished

AS LOW AS $89! NEW!

Voxon 14" and 15" Monitors

See our line items below for other monitor blowout specials!

Blue & White G3's

NEW! ON SALE!

ONLY $1,249

- 450-MHz PowerPC
- 128 MB RAM
- 9 GB Ultra Wide SCSI HD
- CD
- * Keyboard & Mouse
- 16 MB ATI Rage Pro Video Card

1•800•227•3971

PowerMac 6100 Bundle

*Includes 13" Monitor
*8 MB Ram
*250 MB Hard Drive
*2X CD
*modem
*keyboard & mouse
*Free ClarisWorks 3.0
*Free Shreve Systems T-Shirt

ONLY $199

Internet Ready

We stock parts for new and vintage Macs!

FLOPPY DRIVE BLOWOUT!

1.44 Super Drives STARTING AT $19!

NEW

PART # 661-0474

NO EXCHANGE REQUIRED!

BRAND NEW!

MacAlly Extended Keyboard NEW! $19

NEW! Genuine Apple ADB Mouse II $49

HP Deskjet 890 ONLY $249

ClarisWorks 3.0 CROSS-PLATFORM- FOR MAC OR PC

ONLY $19!

We also specialize in digital audio recording! Call for the best prices on Alesis, Akai, Tascam, Digidesign and Mark of the Unicorn!

FINALLY! A REAL PERSONAL HOME STUDIO THAT YOU CAN AFFORD! AS LOW AS $699

AKAI DPS 12 v2

Check out our website at www.shreveaudio.com

ClarisWorks 4 Internet Edition ONLY $39! NEW!

System Bundles SALE!

7100/60	5200	4400	5400/120	8500/120	7250/120	7200/75
24/350/CD/13" Monitor	24/350/CD/15" Monitor	32/2GB/CD	16/1.6GB/CD	16/1GB/4X	32/2GB/8XCD	0/0/0
$349 refurbished	$399 refurbished	$499 refurbished	$699 refurbished	$699 refurbished	$499 NEW	$199 refurbished

PowerMac CPU SALE!

PRINTERS

Apple 11x17 Color Inkjet Printer NEW, #M9500	$249.
HP Deskjet 890 CM, NEW	$249
Apple StyleWriter 1200, refurbished	$129.
Apple Stylewriter 1500, factory refurbished	$149.
Apple StyleWriter 2400, refurbished	$129.
LaserWriter IInt, refurbished w/ Toner	$199.
LaserWriter IIf w/5MB RAM, refurbished	$549.
LaserWriter IIg w/5MB RAM, refurbished	$649.
Texas Instruments Micro Laser Pro E NEW	$449.

Laser toner cartridges sold separately

IMAGING PRODUCTS

Apple QuickTake 150 refurbished	$149.
Apple QuickTake 100 refurbished	$99.

MACINTOSH LOGIC BOARDS

G3 logic board, No Processor, No ROM	$399.
7200/90 logic board, refurbished	$179.
LC logic board, refurbished	$49.
LC II logic board, refurbished	$149.
Mac LCIII logic board, refurbished, exchange	$149.
Performa 630 ,No Processor, refurbished	$49.
Quadra 950 logic board, refurbished	$179

APPLE PC COMPATIBILITY CARDS

Pentium 100-MHz, refurbished	$149.
Pentium 166-MHz, 12" PCI card, refurbished	$299.
586 100-MHz, 7" PCI card, refurbished	$99.
486 66-Mhz for 6100 series, NEW	$29.

MONITORS

Apple 17" Studio Display NEW	$299
Apple 14" A/V refurbished	$129.
Apple 14" Multiscan, refurbished	$119.
Apple 15" Multiscan, refurbished	$119
Apple 15" AV, factory refurbished	$199.
Apple MultiScan 17", refurbished	$179.
Apple 20" Multiscan, refurbished	$599.
Radius IntelliColor/20e, factory refurbished	$999.
Voxon 14" Multiscan NEW	$99.
Voxon 15" Multiscan NEW	$129.
Power Computing 15" refurbished	$119.
Power Computing 17" refurbished	$169.

NUBUS ADAPTERS

Quadra 660AV NuBus Adapter	$79.
Quadra 610 Nubus Adapter	$79.
IIsi Nubus adapter with math co-processor	$49.

VIDEO CARDS

ATI XClaimVR RAGE II 2MB with FREE TV Option	$149.
E-Machines DoubleColor SX Nubus Card NEW	$29.
RasterOps 24MX NEW, 24-bit Nubus	$149.
*PowerMac HPV Card (1MB)	$79.
*PowerMac A/V Card (2MB)	$199.

1•800•227•3971

*Products are refurbished unless indicated as "new". Prices reflect a 2% cash discount and are subject to change without notice. Returns are subject to a 15% restocking fee. Not responsible for typographical errors. All trade-ins MUST BE in working condition. Refurbished systems may include like-new components and may also include cosmetic blemishes which do not functionally impair performance of the hardware.

www.shrevesystems.com

Since 1987
MEGAHAUS
Everything High Tech
All Under One Roof

BEST BUY AWARD WINNER!

We've been satisfying customers for nearly 14 years!

Here's this month's hot features. Check out more at www.megahaus.com/mac

Monitors

ViewSonic
18" Pro
"Plug N Play"
(PF790) **$509**

See our complete selection on our website under the "Monitors" listing.

Digital Cameras

SONY *Take your pic!*

- Hi-speed auto focus, floppy storage, 640 x 480 pixels (MVC-FD73) **$495**
- LCD display, 6X Digital Zoom lens, floppy storage, 1280 x 960 pixels (MVC-FD85) **$695**

USB & 1394 Stuff

USB 4x4x6 CD Rewritable for PC or Mac (CRX100E/X2)	$309
USB 250MB Zip Drive w/Software (ZIP250USB)	$169
USB to SCSI Adapter (USBSCSI)	$69
USB External Hard Drives w/Cable:	
10GB or 15GB (USB10/15GB)	$165/$179
20GB or 30GB (USB20/30GB)	$205/$229
1394 PCI/Mac Board Kit (70HTL13941)	$89
1394 Hub (70HTL00030)	$89
1394 Repeater: (70HTL00020)	$45
1394 15 Ft. Cable: 6pin to 4pin (70CAB13943)	$28
1394 15 Ft. Cable: 6pin to 6pin (70CAB13942)	$30

Hard Drive

Quantum

18.4 GB $409
SCSI Ultra 160
Int. (TY318400LW)
Ext. $539
(TY318400LWX)

CD-Rewritable Drive

YAMAHA
8x8x24 ***SCSI CDR-W***
w/Mastering Soft. & 1disk
Int. (YCRW8824S) **$215**
Ext. (5 disks + ISA controler) (YCRW8824SX) **$255**

Hard Drive

Seagate

9.2 GB $259
SCSI Ultra 160
Int. (ST39204LW)
Ext. $389
(ST39204LWX)

250MB ZIP Drive

250MB ZIP Ext. Drive iomega

(ZIP 250) **Just $149**
SCSI Mac or PC
250MB disks $17 each (ZIP250C)

HARD DRIVES

Quantum

(Call for deals on our externals)

				Int.
ULTRA 160 SCSI				
9.1GB	7200	4MB	XC309100LW	$189
9.2GB	10,000	8MB	TY309200LW	$265
18.3GB	7200	4MB	XC318400LW	$323
18.4GB	10,000	8MB	TY318400LW	$409
36.7GB	7200	4MB	XC336700LW	$589
36.7GB	10,000	8MB	TY336700LW	$645
73.4GB	10,000	8MB	TY373400LW	$1195
IDE ULTRA ATA/66				
10.0GB	4500	128K	QML10000LD	$Call
10.2GB	7200	2MB	QMP10200LM	$102
15.0GB	7200	2MB	QMP15000LM	$113
20.0GB	4500	128K	QML20000LD	$Call
20.5GB	7200	2MB	QMP20500LM	$129
30.0GB	4500	128K	QML30000LD	$Call
30.0GB	7200	2MB	QMP30000LM	$169
40.0GB	4500	128K	QML40000LD	$Call

IBM

ULTRA 160 SCSI				
9.1GB	7200	4MB	07N3120	$233
9.1GB	10,000	4MB	07N3220	$239
18.2GB	7200	4MB	07N3110	$353
18.3GB	10,000	4MB	07N3210	$355
36.4GB	7200	4MB	07N3100	$589
36.4GB	10,000	4MB	07N3200	$575
IDE ULTRA ATA/100				
15.0GB	7200	2MB	07N5637	$112
20.0GB	7200	2MB	07N5638	$133
20.5GB	5400	512K	07N3924	$98
30.0GB	7200	2MB	07N5639	$159
45.0GB	7200	2MB	07N5640	$219
61.4GB	7200	2MB	07N3933	$375
76.8GB	7200	2MB	07N3935	$495

WESTERN DIGITAL

Call for WD Firewire drives!

IDE ULTRA ATA/100				
10.0GB	5400	2MB	WD100EB	$92
15.0GB	5400	2MB	WD150EB	$103
20.0GB	5400	2MB	WD200EB	$118
30.0GB	7200	2MB	WD300BB	$169
40.0GB	7200	2MB	WD400BB	$198

FUJITSU

IDE ULTRA ATA/66				
10.2GB	5400	512K	MPF3102AT	$92
10.2GB	7200	2MB	MPF3102AH	$98
15.3GB	5400	512K	MPF3153AT	$99
20.4GB	5400	512K	MPF3204AT	$107
20.4GB	7200	2MB	MPF3204AH	$129

Maxtor

IDE ULTRA ATA/100				
20.0GB	2MB	7200	M52049H4	$119
20.4GB	512K	5400	M32049H3	$103
30.0GB	2MB	7200	M53073H6	$155
30.7GB	512K	5400	M33074H4	$123
40.0GB	2MB	7200	M54098H8	$199
61.4GB	2MB	5400	M96147H8	$249
81.9GB	2MB	5400	M98196H8	$311

HARD DRIVES

Seagate

(Call for deals on our externals)

				Int.
ULTRA SCSI				
9.2GB	7200	2MB	ST39216N	$229
18.4GB	7200	2MB	ST318416N	$339
ULTRA WIDE SCSI				
9.2GB	7200	2MB	ST39216W	$229
18.4GB	7200	2MB	ST318416W	$339
ULTRA 160 SCSI				
9.2GB	7200	2MB	ST39236LW	$219
9.2GB	7200	4MB	ST39236LWV	$235
9.2GB	10,000	4MB	ST39204LW	$259
18.2GB	10,000	4MB	ST318404LW	$373
18.4GB	7200	2MB	ST318436LW	$333
18.4GB	7200	4MB	ST318436LWV	$348
18.4GB	15,000	4MB	ST318451LW	$499
36.7GB	10,000	4MB	ST336704LW	$605
36.7GB	10,000	16MB	ST336704LWV	$645
73.4GB	10,000	4MB	ST173404LW	$1099
73.4GB	10,000	16MB	ST173404LWV	$1109
IDE ULTRA ATA/66				
10.2GB	7200	2MB	ST310210A	$93
15.3GB	7200	2MB	ST315320A	$104
20.4GB	7200	2MB	ST320420A	$119
30.6GB	7200	2MB	ST330630A	$165

Visit our website under www.megahaus.com/sea for the hottest deals on Seagate drives.

2.5" IDE LAPTOP

6.0GB	9.5mm	Toshiba	MK6014MAP	$125
10.0GB	9.5mm	Toshiba	MK1016GAP	$159
20.0GB	9.5mm	Toshiba	MK2016MAP	$263
5.0GB	9.5mm	IBM	07N4391	$119
10.0GB	9.5mm	IBM	07N4390	$152
20.0GB	9.5mm	IBM	07N4388	$269
30.0GB	12.5mm	IBM	07N4392	$415
32.0GB	12.5mm	IBM	07N4138	$479
6.0GB	9.5mm	Hitachi	DK23BA60	$125
10.0GB	9.5mm	Hitachi	DK23BA10	$159
20.0GB	9.5mm	Hitachi	DK23BA20	$245

MAKE IT REMOVABLE

Turn your drives into removables with these high quality DataPort™ drive cartridges and frames. *Ultra Security.*

DataPort VI - *COMPLETE KIT - Platinum Finish*
Includes 1 frame, 1 cartridge, mounting screws, & 2 keys.

Ultra SCSI	$108	(DP2200SM)
Ultra Wide SCSI	$128	(DP2200UWM)
Extra Cartridge/Frame		*Kits also available in a Black Finish*
Ultra SCSI	$61/$54	
Ultra Wide SCSI	$75/$61	

Visit our website at: megahaus.com/dataport

With all the talk about drive shortages, you'll probably find it at MegaHaus - so call us - we are #1 in the US!

We have more than 90 power backup solutions and can create custom configurations to suit your networking and data backup needs. ***CALL US.***

CD ROM

• SCSI Internals • *Call About Our Externals*				
Teac	CD532S	32X	85ms	$72
Plextor	PX32CS (caddy)	32X	85ms	$130
NEC	CDR3010	40X	85ms	$69
Toshiba	XM6401B	40X	85ms	$64
Plextor	PX40TS	40X	85ms	$89
Kenwood	UCR415	52X	90ms	$143
• WIDE SCSI •				
Plextor	PX40TSUW	40X	85ms	$99
• IDE •				
Teac	CD540E	40X	85ms	$43
NEC	CDR3000	40X	75ms	$43
Mitsumi	CRMCFX48X	48X	65ms	$41
Creative	SBCD52	52X	100ms	$40
Kenwood	UCR412	52X	90ms	$79
Kenwood	UCR421	72X	90ms	$110
• CD CHANGER •				
Pioneer 24 X6 Disc Ext. SCSI (DRM6324X)				$395

TAPE BACKUP

Capacity Native-Compressed	Max. Speed		Be Safe Back Up!
• 4mm DAT •			
2-4GB	66MB/min	Seagate STD24000N	$413
4-8GB	30MB/min	Seagate STT28000N	$215
4-8GB	66MB/min	Seagate DDS-2 STD28000N	$509
4-8GB	90MB/min	Sony SDT7000AI	$419
4-8GB	60MB/min	HP C1599AI	$495
12-24GB	144MB/min	Sony DDS-3 SDT9000AI	$579
12-24GB	120MB/min	HP DDS-3 C1554AI	$689
20-40GB	288MB/min	Sony DDS-4 SDT11000AI	wow! $819
48-96GB	66MB/min	Seagate DDS-2 STL496000N	$1599
72-144GB	120MB/min	HP 6 tape load DDS-3 C5648A	$1599
• EXABYTE 8mm DAT •			
7-14GB	120MB/min	ELIANT820	$1169
20-40GB	360MB/min	EXB8900	$1879
140-280GB	180MB/min	EZ17SWK	$4499
• QUANTUM DLT •			
20-40GB	180MB/min	DLT4000	$1285
40-80GB	600MB/min	DLT8000	$3659

Check out the hot tape media deals on our website.

ZIP, JAZ & OPTICAL

Iomega	
100MB Zip Int. SCSI/Ext. USB	$89/$99
250MB Zip Ext SCSI for PC or Mac	$149
2GB Jaz Internal SCSI	$299
2GB Jaz External SCSI	$339
1GB Jaz disk 2-4/5-9/10+	$80/77/75
2GB Jaz disk 2-4/5-9/10+	$85/80/77
Sony Magneto Optical	
5.2GB SCSI-2 Int. 4MB buffer (SMOF551)	$1399
5.2GB SCSI-2 Ext. 4MB buffer (SMOF551X)	$1539
5.2GB optical media (SMAX5.2) 1-4/5-9/10+	$83/80/77

Para Llamadas en Español:
1-800-786-1174

MegaHaus is THE industry leader. Since 1987, we've been providing unlimited technical support & manufacturer's warranties on all products Questions? Call us. We're here to earn your business.

CD MEDIA

Nobody Beats MegaHaus on CD Media Pricing.... *NOBODY!*

CD RECORDABLE MEDIA	
12X Max Speed [CDR74B-5/20/50/100]	5/20/50/100 Pack $5/$18/$42/$78
80 MINUTE MEDIA	
12X Max Speed [CDR80-5/20/50/100]	5/20/50/100 Pack $4/$13/$32/$59
CD REWRITABLE MEDIA	
4X Max Speed Budget [CDR74WB-5/20/50/100]	5/20/50/100 Pack $6/$24/$56/$104
4X Max Speed [CDR74W-5/20/50/100]	5/20/50/100 Pack $12/$45/$107/$199
CD-R PRINTABLE SURFACE MEDIA	
12X Max Speed Budget [CDR74PB-5/20/50/100]	5/20/50/100 Pack $4/$15/$35/$66
12X Max Speed [CDR74P-5/20/50/100]	5/20/50/100 Pack $7/$26/$62/$115
CD RECORDABLE PLATINUM MEDIA	
12X Max Speed [CDR74PA-5/20/50/100]	5/20/50/100 Pack $6/$24/$57/$106

SCSI CDR-W's

Yamaha 8x8x24 ReWritable •
Packet write, 4MB buffer, tray loading.
Int. [YCRW8824S] /Ext. [YCRW8824SX] $219/$269

Sony 10x4x32 ReWritable •
Packet write, 4MB buffer, tray loading.
Int. [CRX145S] / Ext. [CRX145SX] $275/$335

CenDyne 12x4x32 •
Packet write, 4MB buffer, tray loading.
Int. [CD1CD00028] / Ext. [CD1CD00028X] $309/$369

Hewlett Packard 12x8x32 ReWritable •
Packet write, 4MB buffer, tray loading.
Int. [C4506A] /Ext. [C4506AX] $329/$389

Plextor 12x10x32 ReWritable •
Packet write, 4MB buffer, tray loading.
Int. [PXW1210TSB]/Ext. [PXW1210TSBX] $335/$395

SOFTWARE

Macromedia Dreamweaver V3.0 for Mac OS 8.1 or later (DWM30D01)	$295
Macromedia Flash V5.0 for Mac OS 8.5 or later (FLM50D01)	$369
Macromedia Dreamweaver 3.0 w/Fireworks 3.0 Studio for Mac OS 8.1 or later (WBM30D01)	$399

This is just a sampling of our software. Call us or visit our webstore for complete listings.

Since 1987
MEGAHAUS
Everything High Tech
All Under One Roof

1-800-475-7531

Sales lines open: M-F 7-8, Sat 9-3, CST

www.megahaus.com

Secure Ordering • Daily Specials • #1 Drive Store on the Web!

2201 Pine Drive, Dickinson, Texas 77539
(281) 534-3919 Fax: (281) 534-6580

Prices & specifications subject to change without notice. Shipping charges are nonrefundable. Returns must be in new condition and in original packaging. Defaced items may not be returnable. No refunds on software or special orders (items not listed in ad.) All refunds subject to 15% restocking fee. All trademarks are registered trademarks of their respective companies: Personal checks held for clearance. We reserve the right to refuse any sale for any reason. Bundle price good only if sold at ad price. All warranties listed are manufacturer's warranty only. For complete terms and policies, see our website's checkout stand. ©2001 MegaHaus, Inc.

CALL THE MAC EXPERTS!

Your one-stop source for Apple® Macintosh® – over 30,000 items on sale at better than mail order prices!
It's pretty simple: we know a lot about Mac® stuff, and we care about our customers.

Blowouts & Specials

Panzer General & Angel Devoid $2.00
US Atlas/Space Shuttle Bundle $5.00
Fun & Learning Game Bundle $9.00
Contour Design Mouse Tray.....$9.00
Toast 4.0 OEM for Mac.....$29.00
Logitech Cordless Mouse $29.00
Used Radius Full Page Display ...$39.00
Norton Antivirus 6.0 .....$39.00
Gravis Firebird ADB Joystick $39.00
Disney's Sketch Board $45.00
MacroMedia Freehand 8 Upg.....$49.00
Norton Utilities 5.0 .....$55.00
Mac OS® 8.1 Full Retail $59.00
Altec Lansing 3 pc Sound Syst....$59.00
Internal 1 Gb SCSI Drive.....$99.00

Apple® "Open Box"

Printer Cass. for LW 300&4/600 ...$19.00
Face-up Output Tray for 12/640 ....$19.00
LocalTalk Option for StyleWriter...$19.00
Envel or Xtra Feeder for LW 8500 .$19.00
AC Adapter for Powerbook G3 .....$59.00
Apple® Battery for Pwbk 3400/G3 ..$59.00
Apple® Battery for G3 Pwbks $88.00
Apple® FireWire Kit.....$129.00

Indigo or Ruby iMac™ DV 450* only $1088 – Save over $200!

Incredible value for the latest in Apple's iMac™
***Factory refurbished by Apple, 3 year AppleCare warranty is available.**

Lacie SCSI CD-RW 16x10x40x ...$389.00
Lacie DVD-RAM 4.7/9.4GB $695.00
Lacie 10Gb PocketDrive Firew....$395.00
Lacie 20Gb PocketDrive Firew....$595.00

Ask how you can receive 64 megabytes of ram FREE!

Pre-Owned Macs at the lowest prices ever!
Save Your Peripherals! Great price/performance!

Fully configured pre-owned Macs™
6100 series, starting at.....$98
6200 series, starting at.....$169
6400 series, starting at.....$299
7100 series, starting at.....$118
7200 series, starting at.....$148
8100 series, starting at.....$239
7500 series, starting at.....$278
7600 series, starting at.....$309
6400 series, starting at.....$349
7300 series, starting at.....$388
8500 series, starting at.....$449
9500 series, starting at.....$489
9600 series, starting at.....$849

Umax S900 Towers, starting at.....$429
PowerBase Towers, starting at.....$279
PowerCenter DT's, starting at.....$239
PowerTower Pros, starting at.....$499
StarMax Desktops, starting at.....$299

iMacs™ starting at.....$599
iBooks™, starting at.....$1149

Beige G3 Desktops, starting at.....$878
Blue & White G3's, starting at.....$949
G4 Graphites, starting at.....$1049
PowerBook® 5300's, starting at.....$399
PowerBook® 1400's, starting at.....$749
PowerBook® 3400's, starting at.....$799
PowerBook® G3's, starting at.....$1388

Factory Refurbished Macs™
iMac™ G3/233 32/4/24x CD.....$679
iMac™ G3/266 32/6/24x CD.....$699
iMac™ G3/333 32/6/24x CD.....$709
iMac™ G3/350 64/6/24x CD.....$719
iMac™ G3/400 64/10 /DVD.....$888
Graphite iMac™ 128/13/DVD.....$1088
iBook™ 300 32/3.2/CD.....$1249
Graphite iBook™ 366 64/6/CD...$1369
PowerBook® G3/233 32/2/CD..$1429
PowerBook® G3/266 64/4/CD..$1699
PwrBook® G3/500 128/12/CD.$2899
Blue/White G3/400 64/6/DVD...$999
G4/400 64/10/DVD 0 mod.....$1249
G4/450 128/20/DVD.....$1799

Max the Gorilla says "This ain't no bull!"

The PowerMax "No Bull!" Bundles

• No complicated reseller rebates • No special terms or conditions • No "get this if you buy this"
• No hidden charges • No hooks, installation fees or, well, any other bull!

The G4 Bulldozer Bundle
New G4/400 upgraded to 128 Mb of RAM, 10 Gb Drive, DVD-ROM, 56k modem, 15" Apple LCD display, Canon BJC-2100 Inkjet printer. **$2099** After Canon printer rebate

The iMac™ Bullseye Bundle
Refurbished Blueberry iMac™ upgraded to 128 mb of RAM, 6 Gb Drive, CD-ROM, 56k, Canon BJC-2100 Inkjet printer. **$799** After Canon printer rebate

The iBook™ Bullfighter Bundle
Refurbished Graphite iBook™ upgraded to 128 mb of RAM, 6 Gb Drive, CD-ROM, 56k, Graphite iBook Carry Case, Portable Canon BJC-85 Inkjet printer. **$1699**

The PowerBook® Bulldog Bundle
Refurbished Powerbook® upgraded to 192 mb of RAM, 12 Gb Drive, DVD-ROM, 56k, Graphite iBook Carry Case, Portable Canon BJC-85 Inkjet printer. **$2999**

We'll take your Mac® OS computer in trade toward the purchase of new product. Call one of our expert Mac® consultants for full details!

• Call us – or visit
WWW.POWERMAX.COM
• Over 200 Mac models to choose from
• Knowledgeable, non-pushy salespeople • Great tech support • No voice mail (during office hours) • We consult on all Mac hardware & software • no games, no hidden charges... no bull!

POWER MAX™
Knowledge is Power

800-613-2072

Local: (503) 624-1827 • Fax (503) 624-1635
email: sales@powermax.com

Prices subject to change without notice. Prices reflect cash discount. Credit card orders strictly verified against fraudulent use. With use of credit card as payment customer acknowledges that some products are subject to final sale. Many prices are limited to stock on hand. All brand or product names are registered trademarks of their respective holders.

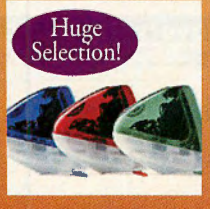
• Personal Financing • Fast P.O. Approvals • Business Leasing • Weekly specials on our web site
• Order on line or call one of our experts!

Authorized Reseller

DISCOVER NOVUS VISA MasterCard AMERICAN EXPRESS

G4s & Cubes | DV iMacs™ | iBooks™ | PowerBooks® | Blue & White G3's | Beige G3's | Software

Sign on. Save Big. Have Fun.



MUG STORE

Macintosh User Group members enjoy access to a very special Apple-sponsored web site featuring super deals on the latest Apple products as well as factory refurbished and discontinued Macs, and much more! Not a member? Find out how you can get these great deals by calling PowerMax at 800-689-8191.

Apple Specialist

www.applemugstore.com

Authorized Reseller

The MUG Store. A cooperative venture between Apple and PowerMax to bring MUG members exclusive deals on the latest Mac® products and special offers on discontinued and *factory refurbished computers.

PowerMax is a division of Computer Stores NW, Corvallis, OR.

HARD CORE
Gear for the true Mac Enthusiast

www.Hardcore4mac.com

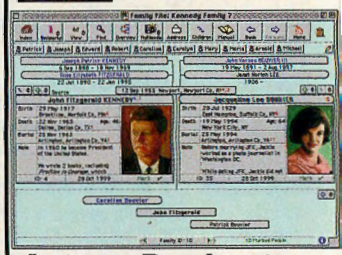
Check out our fun designs on:
Caps, hooded jackets, shirts, and much more.

DON'T FORGET
We have the perfect gift, "GIFT CERTIFICATES!"

MAC OF ALL TRADES
www.macofalltrades.com
A new way to LOOK @ used MACS
800.304.4639
500 Bishop Street Suite E3 Atlanta Ga 30318
Fax 404.355.5461
macofalltrades@macofalltrades.com

NEW VERSION
REUNION® 7
Reunion 7 is the perfect tool to organize your family history. Plenty of room for names, dates, places, stories, notes, tidbits, and sources. Include all your favorite pictures, sounds, and home movies. Automatically build multimedia web pages to share your family history on the Internet! Print large, colorful tree charts, timeline charts, and fan charts for family reunions. Fun and educational for the whole family. Reunion 7 includes 80 new features and enhancements!

Mac Addict Rated
FREAKIN' AWESOME!

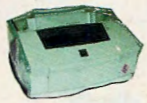


Leister Productions
PO Box 289, Mechanicsburg, PA 17055
phone 717-697-1378 fax 717-697-4373
e-mail: info@LeisterPro.com
web site/demo: www.LeisterPro.com

To order, call
MacConnection 800-800-2222

Protect Your Investment
Custom fit designer covers
Computer Skins

G3/G4 Cover
$29.99



Epson Printer Cover
$14.99

iMac Cover

$19.99

17" Studio Display $21.99
Typeable Keyboard Skins $14.99

www.computerskins.com

Mac POWER
Sales & Service, Inc.
BUY · SELL · TRADE
UPGRADE · REPAIR
New · Used · Refurb.
• Powrbooks • Printers
• PowrMacs • Peripherals
• Performas • Ram
• Quadras • Parts
• MacII-LC • Software
• Monitors • Accesories
www.macpowerinc.com
888-275-POWER
Fax: 408-448-6132
1080 Blossom Hill Road #E
San Jose, California, 95123

ACADEMIC DISCOUNTS
Super Savings for Students, Teachers, & Schools!
Web Bundle: Dreamweaver, Fireworks, Freehand, & Flash for $235!
Visit us online for amazing Adobe prices and bundles!!!

Adobe Acrobat	Call!	Filemaker Pro 5	$148	Office 2001	Call!
Boris AE 3.0	$299	Fireworks 3	$98	Painter 6	$199
Coda Finale 2001	$199	Flash 5	$98	Photoshop 6	Call!
CodeWarrior Pro 6	$109	Form•Z	$825	Sibelius	$229
Director 8	$329	Freehand 9	$98	TechTool Pro 3	$79
DreamWeaver 3	$98	GoLive 5	Call!	Vectorworks 8.5	$329
ElectricImage	$639	Illustrator 9	Call!	Wacom 4x5 Tablet	$79
		Lightwave 6	$789	(PC titles also available!)	

Visit AcademicSuperstore.com for online ordering & tons of other products!
Free Catalog!
1-800-294-4035
Fax PO's and ID's to 512-450-0263
ACADEMIC SUPERSTORE
www.AcademicSuperstore.com

DATA RECOVERY: 800-440-1904
7 good reasons to choose DriveSavers:

"We Can Save It!"

1. Fastest, most successful data recovery service available.
2. Recommended and certified by **all** drive companies to maintain your warranty.
3. Advanced, proprietary recovery techniques.
4. 24-hour, onsite, and weekend services.
5. Retrieve recovered data instantly with DATAEXPRESS™ over high speed secured Internet lines.
6. Featured in Mac Addict, Macworld, Mac Week; also by CNN, BBC, Forbes, and many others.
7. Federal and State Contracts.

DRIVESAVERS DATA RECOVERY Since 1985

Visit DriveSavers at: www.drivesavers.com
©2000 DRIVESAVERS, INC. 400 BEL MARIN KEYS BLVD., NOVATO, CA 94949 INTL: 415-382-2000 FAX: 415-883-0780

G3/iMac Parts In Stock!
800-WE-FIX-MACS
Free Diagnostics • Best Prices • Best Warranties • Huge Inventory

Logic Boards:
6400, 6500,7200,7500
8500,8600,9500,9600
G3,iMac From $99

G3 Wallstreet Battery $99

Beige G3/266 w/15" Monitor $699
G4/400 64/10GB/CD $1199 w/17"Studio Display $1399

PowerComputing Specialists

To See Daily Specials Go To
www.AllMac.com

G3 450Mhz Zif CPU $249
Apple 2gb/4gb Scsi $99/$149
Apple 32x/24x CD $99/$129
Powerbook CD From $149

2202 N. First Street San Jose, CA 95131 • 800 933-4962
Repair • Upgrade • Buy • Sell • Trade New • Used • Refurbished

Save – AppleWorks Training Products

AppleWorks 6 for Dummies	$14.99	Getting Started w/ AW Spreadsheets	19.95
AppleWorks 6: Missing Manual	14.99	MacAcademy AW 6 Videos	39.95
AppleWorks Journal (10 issues)	39.00	MacAcademy: Quick Start Your iMac CD	19.95
AppleWorkShop 6 for Teachers	29.95	Macworld AppleWorks 6 Bible	27.99
AW 6 Button Bar Wall Chart	9.95	Macworld Mac OS 9 Bible	29.95
AW 6 Keystroke Wall Chart	9.95	200+ Updaters for OS 9	14.95
Both Wall Charts	14.95	Macintosh Batteries	call
AW 6 Reference Sheets (25)	19.95	U.S. s/h first item	5.00
AppleWorks 6 Step by Step	18.95	Additional items @	2.00
Getting Started w/ AW Databases	19.95		

– Satisfaction guaranteed or your money back. –
AppleWorks Users Group; (888) 781-AWUG; Fax: (734) 454-1965
orders@awug.org; www.awug.org

one touch sit to stand!

catalog 888 302-DESK

Work the way you want, anytime you want.

The Biomorph EXO desk has a foot-activated lever for instant sit-to-stand height-adjustment to suit users of all sizes and ages.

The EXO desk is one of four fully adjustable desks, chairs and ergonomic space solutions. Configure your perfect set-up and order now online.

biomorphdesk.com

ergonomic computer furniture direct

biomorph® interactive desk

Biomorph is a registered trademark of S.Barlow-Lawson ©2000 Ground Support Equipment (US) Ltd., New York, NY 10004

Come visit us at Macworld San Fransico Booth # 1148 Jan 10-13, 2000

EZQUEST®

FireWire • USB • SCSI
CDR/W's & Hard Drives
www.ezq.com

800•673•MACS

916-652-1880 fax 916-652-1881 800-673-6227

WE SHIP ANYWHERE IN THE WORLD. CHECK OUT OUR WEEKLY WEB SPECIALS http://www.poweron.com

iMac DV G3/400 Mhz
includes DVD CDROM

$819.99 refurbished

64 MB RAM • 10 GB HD • USB
FireWire • Ethernet • 56k V.90
Apple DVD CDROM included!

MORE iMAC DEALS

iMac 333 -32/6 GB/CD/E/56k	619.99
iMac 350 -64/6 GB/CD/E/56k	699.99
iMac 400 DV SE-128/13 GB/DVD/E/56k	1099.99

PowerMac 5200
Special

$129.99

INTERNET READY
24 MB RAM • 500MB HD • CDROM
EtherNet • Floppy Drive
Keyboard • Mouse • Built-in Monitor

SuperMac S900 Bundle
16/2GB/CD/Vid/Ethernet & Apple 14" MS

$449.99 New/OEM
Tower, 6 PCI Slots
EtherNet, Serial & SCSI

S900 Base Config 16/0/0/0 604e	299.99
S900 604e 16/2GB/CD/Vid/EtherNet	499.99
S900 17" Monitor Bundle 604e 24/2GB/CD/Vid/EtherNet	549.99

SUPERMAC PARTS IN STOCK

iBOOK G3/300 Mhz
includes notebook bag

$1179.99 refurbished

32 MB RAM • 3.2 GB HD
USB • Ethernet • 56k V.90

MORE iBOOK DEALS

iBook 300 -64/6 GB/CD/E/56k	1359.99
iBook 366 SE-64/6 GB/CD/E/56k	1549.99

USB Printers & Cables

Apple Original HARD DRIVES
Seagate Barracuda

4.3GB SCSI $99.99

External Drives w/cables add $50

1 GB SCSI Hard Drive-Internal (P)	69.99
2 GB SCSI Hard Drive-Internal (N)	99.99
4 GB SCSI Hard Drive-HH Int. (P)	99.99
External Zip Drives-no cartridge (P)	69.99
USB to EIDE External Cases (N)	89.99
27 GB EIDE Hard Drive-Internal (N)	149.99

Apple Original CDROM
CDROM Drives are MacOS Bootable and use Apple Original Driver Software

$59.99 8X SCSI CDROM

MORE CDROM DEALS

2x SCSI CDROM Drive-Internal (P)	29.99
24x SCSI CDROM Cyberdrive-Int (N)	89.99
24x SCSI CDROM Cyberdrive-Ext(N)	109.99
iMac CDROM Rev. B (266-333) (N)	119.99
6x ATAPI DVD CDROM -Internal (N)	149.99
32x ATAPI CDROM Drive-Internal (N)	99.99

OTHER GREAT DEALS

Umax 2000U Scanner refurbished
$49.99 USB Interface 600x1200 dpi 36-bit Color

Special
Apple 17" Multiscan refurbished Trinitron Tube
$129.99

Deals
Apple 20" Multiscan refurbished Trinitron Tube
$299.99

PCI VIDEO CARDS
Supports TWO Additional Monitors

250Mhz RAMDAC
1920x1200 max
128 bit 2D/3D
Twin Turbo
Dual-Ported EDO VRAM
$99.99

MORE VIDEO CARDS

ixMicro Game Rocket 16MB VRAM Voodoo Banshee, 250Mhz -PCI (N)	99.99
Radius Thunder TX 1152 (16MB) 12MB RAM + 4VRAM -PCI (N)	59.99
Radius Thunder 3D (32 MB) 24MB RAM + 8VRAM -PCI (N)	89.99

MANAGER SPECIALS

USB Keyboard iKEY refurbished
$29.99 Translucent Design, Rev. A OS 8.x compatible Includes 5' USB cable

Apple Floppy Drive new
$59.99 New Manual Floppy 661-0121 or 661-1390 (for 840av to G4)

56K External Modem new
$69.99 OEM Packed/NEW Includes Cables Mac Ready

Mac OS 8.1 CD new
$29.99 Complete Installation OEM Packed/NEW CDROM

LaserWriter 10/600
NEW WITH RETAIL BOX

$149.99
10ppm, 600dpi
Int'l 220V or US
(Use with PCI macs up to Beige G3)

MORE PRINTING DEALS

IN STOCK

Toner	HPII/LW IINT/IINTX	$39.99
Toner	HPIIP/Personal LaserWriter	$54.99
Toner	Select 300 Series	$82.99
Toner	12/640 PS	$88.99
Ink	Epson 600/740/800 CMY	$24.99
Ink	Canon BC-02 BLK	$18.99

All brand or product names are registered trademarks of their respective holders and are respectfully acknowledged.

www.poweron.com

sales@poweron.com

Check Out Our Complete Inventory Online

PowerON Computer Services
4323 Anthony Ct. #1 Rocklin, CA. 95677

Gov't & School PO's Accepted
CALL for EDUCATIONAL Quotes

Mon-Fri 7-6, PST Sat 10-5 PST

All Prices include 3% cash discount. All items are Used or Refurbished unless otherwise indicated. ALL SALES FINAL.

MEMORY

Lifetime Warranty on all MEMORIES.
Call for the Latest Pricing.

We Have The Best Deals On PB. Batteries!

iMac 233-333 MHz SDRAM

32/64MB	$45/69
128MB	$109
4MB VRAM	$29

G3/G4/iMac 350-450 MHz

64MB	$49
128MB	$79
256MB	$195

168 PIN EDO/FPM DIMM

32/64MB	$69/129

72/30 PIN SIMM

16/32MB 72 Pin	$35/65
4/16MB 30 Pin	$9/29

PowerBook G3/iBook

32/64MB	$45/69
128MB	$109

PowerBook 1400

24/32MB	$89/109
48MB	$169

PowerBook 3400/5300
memory in stock!

2.5" Notebook HardDisk Drives

TOSHIBA	6 GB IDE	$149
TOSHIBA	12 GB IDE	$195
TOSHIBA	20 GB IDE	$279
IBM	10 GB IDE	$179
IBM	12 GB IDE	$210
IBM	20 GB IDE	$279

eritech
INTERNATIONAL. INC.
213 North Orange St., Suite C,
Glendale, CA 91203

CALL Toll Free 1-888-808-6242
Phone:(818)244-6242 FAX:(818)500-7699
www.eritech.com
e-mail:eritech@sprynet.com
Prices Are Subject to Change without Notice!
Prices effective 11/01/00

1-800-4-MEMORY

LAPTOP - DESKTOP - CAMERA

MEMORY

WE CAN BEAT ANY PRICE ON ANY MEMORY FROM ANYONE PERIOD !!!

SHOP FIRST, THEN CALL US

NO RE-STOCKING FEE - MAJOR BRANDS
BRAND NEW PARTS - FREE TECH HELP

SPECIALS ON THE WEB
WWW.18004MEMORY.COM

MEMORY

DATA MEMORY SYSTEMS - CALL 800-662-7466

Lifetime Memory Guarantee - 30 Day Money Back

AC Adapters
Batteries
Cables
Camera Memory
Computer Sys.
DIMMs
Iomega Stuff
Modems
Monitors
Networking
Notebook Mem.
PowerBook Mem.
Printer Memory
SDRAM
SIMMs
Storage Drives
Surge Supressors
USB Accessories
VRAM

UPGRADE YOUR MAC SIMPLY!

SONNET SIMPLY FAST

DMS has Sonnet CPU upgrades for nearly all Macs in stk.

Don't replace, upgrade!

We've got Mac CPU Upgrades

POWERLOGIX

DMS
DATA MEMORY SYSTEMS

DATA MEMORY SYSTEMS
24 Keewaydin Drive
Salem, NH 03079
Fax: 603-898-6585
We accept corporate,educational and government purchase orders with prior approval

Since 1987, DMS has provided customers with the best memory prices, guarantee and service anywhere.
Nothing has changed!

www.datamem.com

Take Control!

Remote Control for PowerPoint, QuickTime, DVD, CD, & MP3 Software!

"Flawlessly controls every supported application..." - MacAddict Feb 2000

MacAddict RATED FREAKIN' AWESOME! www.macaddict.com

Digital Media Remote
USB remote control for PowerPoint, DVD, CD, & MP3 software players ($79)

USB Twin Serial Adapter
Add 2 Mac serial ports to your USB Mac
- For use with tablets, PDAs, cameras & many printers
- Two ports for the price of single port solutions! ($79)

Macworld

USB PDA Adapter
Connect Palm organizers to your USB Mac or Win98 PC ($39)

USB 4-Port Hub
Connect more USB devices to your USB Mac ($39)

Keyspan USB Card
Add 2 USB ports to your PCI PowerMac ($39)

KEYSPAN www.keyspan.com (510) 222-0131

Rise Above the

MSRP $24.95

All New
G-Riser™
Heavy-duty legs designed to raise G3's & G4's four inches off of the floor, which reduces dust intake and improves airflow. Perfectly complements the style and look of the computer enclosure, the G-Riser not only adds value to system operation, but adds an air (no pun intended) of distinction to the platform's architecture.

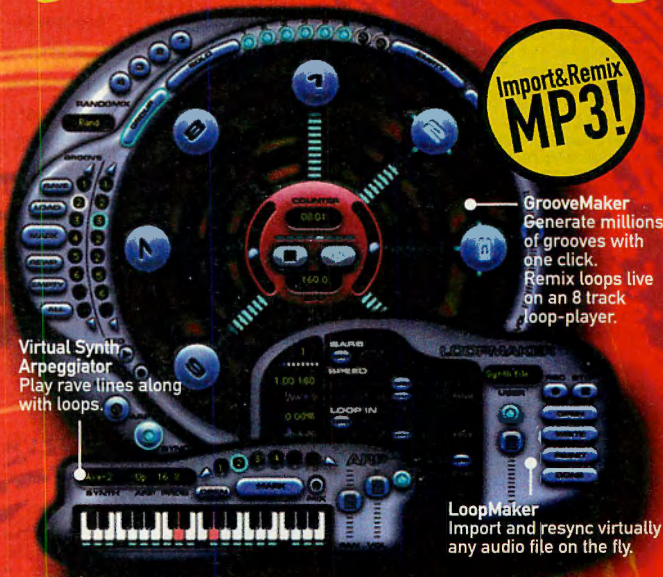
Check out our other G3 & G4 products
www.contourdesign.com

G3 and G4 are registered trademarks of Apple Computer, Inc. The G-Riser is a trademark of Contour Design, Inc.
© Copyright 2000 Contour Design, Inc. ALL RIGHTS RESERVED.

NEW!

GrooveMaker 2.0

Millions of grooves just one click away



WWW.GROOVEMAKER.COM

• Play, Mix, Randomize, Load, Import and Match loops on the fly without ever stopping the [illegible]c!!! • Use it in the studio or play it live • Amazing real-time response • Import and resync virtually any loop, including MP3s! • Integrated virtu[illegible]synth arpeggiator • Integrated groove sequencer for easy visual composition • Export your mixes with multiple audio formats • [illegible] your music directly on the web or on CD • Easyly sonorize your Flash™ animation and any other web, multimedia and video material • Fully QuickTime ™ 4 compatible •

AXE Brazilian Percussion 49.95$

Street Voices Hip-Hop/Rap/ R'n'B - 49.95$

GrooveMaker 2.0 2CD set 79.95$ (upgrade at 49.95$)

Teknostorm Techno 49.95$

Stun Hardcore/Techno 49.95$

GrooveMaker 2.0 DJ Box 4CD set 129.95$ (upgrade at 89.95$)

Drumbasstic Drum'n'Bass 49.95$

Magnetic House/Techno/ Trance/D'n'B - 49.95$

Contaminated Ambient/Dub 49.95$

House Party House 49.95$

800-747-4546
Call ILIO Entertainments
ph: 818-707-7222
fax: 818-707-8552

Software Specials *QuarkXpress4$649*
Apple MacOS7.6/8.1/8.5/8.6 $49/55/59/79
Act V2.8/Acrobat V3/V4 $129/$99/$189
AntiVirus5/SAM V4/Apple UtilitiesCD $49/29
Bryce3D/4/ 3D Suites $99/125*/379
Claris EMailer/DRAW/Calendar Maker $69 ea.
Claris Works V4/5/AppleWorks $49/59/89
Claris Impact/Organizer/HomePage $69 each
Corel DRAW 8 / WordPerfect V3.5 $199/$75
Director V5/Studio/6/Studio$199/389/489/589
DeBabelizer V3/ Dantz Retrospect4.1$199/99
Extensis MaskPro2/PortFolio $199/109
Extensis Preflight Pro/ PhotoGraphics $269/99
Extensis PhotoTool3/QXTool4 $129/129
FileMakerPro.V2/4/4.1/Server3 $49/99/169/589
Final Cut Pro/FlightCheck/Upg. $949/$355/85
Flash 4/ Freehand 8/DreamWeaver2 $249 ea.
Fontographer V4/Freehand V5 Studio $199 ea
Freehand V8 Full Ver. only $ 149
FrameMakerV5/V5.5/FWB CD Tool$389/489/39
FWB Hard Disk Tool Kits PE/V 3 $39/89
GoLive4/Infini-D V4/4.5 $199/369/439
Illustrator V5.5/7/8InDesign $89/189/249/489
Kai's PowerTool LE/V3/V5 $29/69/95
Microsoft Office4.2/97Pro./2001 $149/199/399
MicrosoftOffice98Upg./98/2000 $99/199/$349
MediaCleanerPro4/QuarkXpress4 $389/649
Norton Utilities/Anti-Virus Bundle $79 both
Norton Utilities V3.5/4 NetObject $39/49/89
Painter3/4/5/5.5/FrontPage $69/99/149/229/99
Pantone Color Drive/Color WEB $69 each
PageMaker V5/6.5/PhotoFlash $189/289/89
Persuasion V3/V4 PowerPoint98 $99/189/189
PhotoFrame Vol 1/2 $69 ea. $149 both
Premiere LE/V3/V4/PhotoDiux$89/189/289/25
QuarkXpress4/4.1 $649/$699
Quick Book Pro V4/Quicken 7 $179/35
RayDream 3D/Studio V5/5.5 $89/189/289
SuitCase3/9 Stuffit Delux5.5 $25/$79/59
SoundEdit16+DEC II/SwimSuit CD$199/249/29
StrataStudioProV2.5 /VirtualPC $489/635/149

Apple G4(Dual Pro.) - $2289
G3/266 DT/MT-SCSI/Floppy/Serial$989/1489
G4-DualProcessor 450/500MHZ$2289/3289

JAZ/ZIP, Hard DR. & CDR
400MB/1GB/2GB/3GB $69/99/149/179
4GB/6GB/9GB/18GB $199/219/249/369

Manager Specials
*UMAX PowerLook 3000 W/Transparency *$4889*
*UMAX Mirrage 11X17 *$795*
**Epson 3000 Color Printer*
- Color Proof refurb* **$989**

Jaz ext. Dr. 1GB/2GB $159/$339
Zip Dr. w/Cart. Int. / Ext. $79/$99
Ricoh 4X/2X/8X w/Toast $249
Plextor CD-RW 12X/10X/32X /FWire $389
Apple DVD-ROM Dr. w/MPEG Decorder $399
DVD-RAM 5.2GB SCSI $699

COMBO Drives:
9GB + CD-RW Ext. SCSI $599
18GB AV + JAZ + CD-R $999
JAZ+ZIP $249

Tape Ext. Drive
SDT2000/4000/5000 $199/399/499
SDT7000/9000/10000 $599/799/989
DLT 30/40/60GB $1189/1489/1989
USB Drive - 30/45/60GB $229/289/349

Super RAID- Quantum/Seagate
SCSI Case HH/FF $29/49*
- 8GB/18GB RAID - $ 389/ $689
- 36GB/54GB RAID - $ 989 / $1289
- ***72GB / 108GB RAID - $1489/$1799***
- 144GB/216GB RAID - $2089/$3989
- **288GB RAID - $ 4499**

Iomega
1.0GB Jaz $75
100MB Zip $10*
SyQuest
44MB/88MB $25/35
200/270MB $49/59
EZ135/230 $29/39
SyJet 1.5GB $95
M.O. Cart.
128/230MB $8/12
640/650MB $29/34
1GB Tahiti $89
1.2/1.3GB $49/59
2.6/4.6GB$149/189

Close-Out
*Targa 2000 Pro W/FinalCutPro3388
Apple 1710 Color Monitor $289
*128/256MB
PC100 - $149/289
*SyQuest 270/200MB Ext. Drive $199/199
*Fujitsu 230MB MO / WANG DAT $199 ea.
*SONY 650MB/1.3GB M.O. Dr. $589/989
*AUTOCAD 14 $989
Canvas V5/V6 $249/339
*Conflict Catcher V3/4/8 $39/59/67
*M.S. WIN95/98/Project 98 $69/99/289
*M.S. Words V5/V6/98 $89/189/269
*WordPerfect3.5/Windows98 $75/95

Fax: 310-782-5974
http://www.imagesolutions4U.com
E-Mail: Imagesol4U@AOL.com
2443 208th Street #3 • Torrance, CA 90501
Image Solutions
New Address
Crenshaw | 208th St. | Del AmoAve.
800-352-3420

MacSales
1-888-MACSALES
Buy • Sell • Repair • Parts
1-888-622-7253
www.macs4sale.com

We're Moving Sale
Save 10%-75%
Laptops • Computers • Monitors

Clearance items
Laptops
Powerbook 100,140 $39
Powerbook 160,180 $69
PB Duo 210,230 $49
PB 540C 20/500/192k $199
Computers
Mac SE,SE30,Classic $49
Mac LC,LC II,IIcx ,IIci $39
Quadra 610,650,700,800 $49
PowerMac 7100 8/230 $129
Monitors
13" & 14" Monitors $39
Extras
Ext Kybs , Nubus Cards $5
ADB Trackballs & Mice $10
Audiovision 14 video Adap $10
Clearance items may contain minor defects. Batteries will not be replaced.

***Computer Bundles**
*PowerMac 7100 24/500/CD $199
*PowerMac 7200 16/500/CD $229
*PowerMac 7500 16/1gb/CD $299
*PowerMac 7600 32/1gb/CD $379
*PowerMac 8600 32/2gb/CD $549
with 14" monitor, kyb & mouse or upgrade to 17" for $50 more...

Computers
DT G3 266 64/4gb/CD $799
TWR G3 233 32/4gb/CD $799
iMac 350 64/6gb/CD $649

Powerbooks
iBook 300 32/3g/CD/56k $999
PB1400c/166 16/2g/CD/Floppy $699
PB1400cs/117 16/1g/CD/Floppy $599

Laser Printers
LW Select 360 600DPI $299
LW Pro 630 600DPI / Ethernet $349

Visit our web site for more ! Call for latest updates !
In Arizona 480-368-5770 Fax 480-368-5480 Mon- Fri 8:00-5:00 MST
Call or visit our website at: www.macs4sale.com for latest prices and specials.
School PO's Welcome. Prices reflect a 3% cash Discount. All sales final.
All Products are used or rebuilt. Warranty period varies on products.

The MacSmith
Over 100 Mac titles in stock!!
Sign up for our "Idea of the Day" and win Mac stuff.
If it's not for Mac, it's not here
Attention Schools: Sign up for our iPrint program and earn free iMacs
www.themacsmith.com or call 1-888-769-8476
FREE T-SHIRT
Transfer Paper*
with discount Code: janmac
*With any purchase
USB CABLES .99*
MOUSE PADS .99*
All Aluminum Scooter $$CALL For BEST PRICE
Precious Photos Deserve our Products!
Transfer Paper
Toll Free 877-952-5059
www.save24seven.com

Compu America "The Computer Specialist"
1-800-533-9005
Fax Bids: (310) 475-7744 or
e-mail at SALES@COMPU-AMERICA.COM
10435 Santa Monica Blvd., Los Angeles, CA 90025
Check out our New Web Site!
WWW.COMPU-AMERICA.COM
Government, University and Fortune 1000 P.O.'s are welcome! Business Leasing is Available!
International Orders Please call Tel:(310) 446-1771 We are open Mon-Fri, 8am-6pm PST

POWERMACS Starting at $799
G4/500 Dual 256/40G/DVD-RAM/56K 3299
G4/450 Dual 128/30G/DVD/56K 2299
G4/500MT 256/27G/DVD/ZIP 2299
G4/450MT 256/27G/DVD/ZIP 1999
G4/450MT 128/20G/DVD/56K/ZIP 1749
G4/400MT 128/20G/DVD/56K/ZIP 1499
G4/400MT 64/20G/DVD/56K 1475
G4/400MT 64/10G/DVD/56K 1279
G4/400MT 64/10G/CD/56K 1099
G3/350MT 64/10G/DVD/56K 1049
G3/400MT 128/12GIG/24XCD/ZIP 1099
G3/450MT 128/9GIG/CD/SCSI 1199
G3/400MT 64/6G/DVD 949
G3/350MT 64/6G/DVD 849
G3/350MT 64/6G/CD 799
9600/300 64/4G/24XCD 1499*

G3/350 Minitower 128MB SDRAM 12Gig HD 24XCD & Zip Super Deal $949

WORKGROUP SERVERS
G4/400 256/18G/CD/SHARE 1995
G4/350 128/20G/DVD/SHARE 1499
G3/450 256/2-9G/24X/SHARE 1399
CALL FOR OTHER WORKGROUP SERVERS.

I-MACS Starting at $599
I-Mac G3/500SP 128/30G/DVD/56K 1469
I-Mac G3/450 DV+ 64/20G/DVD/56K 1279
I-Mac G3/400 DV 64/10G/CD/56K 979
I-Mac G3/400 Graphite 128/13G/DVD/56K 979
I-Mac G3/350 64/7G/24XCD/56K 799
I-Mac G3/333 32/6G/24XCD/56K 649*
I-Mac G3/266 32/6G/24XCD/56K 599*
I-Mac all flavors are in stock! Call for the G4-CUBE & other products.

I-BOOKS Starting at $1199
12.1 Active TFT Color Screen, 20xCD, 56K Modem
I-BOOK G3/300 64/6G Graphite 1499
I-BOOK G3/300 64/6G Blueberry 1399
I-BOOK G3/300 32/3.2G Blueberry 1149
I-BOOK G3/300 32/3.2G Tangerine 1149

G3 POWERBOOKS
G3/500 128/18G/DVD/14.1 TFT/56K 3099
G3/400 64/10G/DVD/14.1 TFT/56K 2349
G3/333 64/4G/24xCD/14.1 TFT/56K 1899
G3/300 64/8G/CD/14.1 TFT/56K 1699*
G3/266 64/4G/CD/14.1 TFT/56K 1499*
G3/233 32/2G/CD/12.1 TFT/56K 1299*

HEWLETT PACKARD Starting at $349
1100Xi/1100AXi 379/420
3100Xi/3150OXi 349/450
2100M/2100TN 699/949
4000N/4000TN 1099/1299
4050N/4050TN 1399/1499
4500N/4500DN 2599/3499
4550/4550N CALL
4550DN CALL
5000N/5000GN 1799/2099
8000N/8000DN 1999/2299
8100N/8100DN 2549/2999
8500/8500N CALL/CALL
8500DN 5575
8550/8550N CALL
8550DG/8550DN CALL

EPSON Starting at $69
STYLUS COLOR Printers
600 69*
740/740i 99/99
900/900G 249/299
900N 279
860/880 149/159
1160 399
3000*/3000 799*/1099
5000 2329
Expression 610U/636U 199/199

YOUR #1 COMPUTER SUPERSTORE!
All prices are cash discounted. "*" denotes a refurbished product. Not responsible for typos. Apple, the Apple logo, Mac, Macintosh, Cube, PowerMacintosh, PowerBook, WorkGroup, iMac & iBook are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. All other names & logos are trademarked by their respective owners. We are not Apple Authorized.

MQ Mac-Res-Q

Call Us Or Click Us!
It'll be fun, we promise.
(925) 689-9488 • Fax (925) 689-9487

MacResQ.com

2 Gig SCSI $99! | USB $49! | G3 PB $1199! | PM 8500's $399! | BW G3's $899! | Beige G3 $899!

iBooks on Sale!
300 Mhz • 64 / 6 Gig / CD
Only $1249!

Shipping TODAY!
Mac OS 8.1
Retail Box, Manuals, Reg. Card
Only $69!

PowerMac G3 All In One!
With 15" Display, & Kbd
G3/233 Only $699!
32 / 4 Gig / 24xCD

Over 4000 items in stock!
www.macresq.com

LaCie CDR's From $99!

64 / 6 Gig / DVD

Add a 17" Studio Display For Only $249!

G3/400 Blue & White
Only $999!

Parts! PowerBook Logic Boards Start @ Only $149!
Parts! PowerBook Color Screens Start @ Only $99!
Parts! PowerMac Logic Boards Start @ Only $29!
Parts! Mac Power Supplies Start @ Only $19!

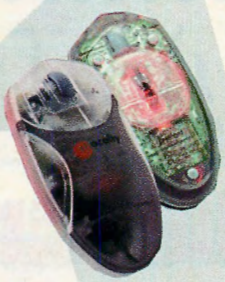
Version 6 Only $19!
NORTON AntiVirus

Checkout Our Independent Customer Ratings!
bizrate.com customer certified

888-447-3728

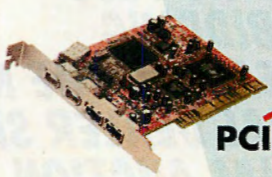
Important Stuff: 15% re-stocking fee on functional returns • No returns after 30 days • All items are refurbished unless noted as new • Prices Subject To Change

macally iwebkey®
USB Wireless Multimedia Keyboard



macally ioptinet®

macally AirStick



PCI FireWire/USB
PCI to FireWire and USB adapter

macally™

Macally is proud to bring you the latest USB and FireWire peripherals for Mac users. Our full line of products are specifically designed to improve your productivity. Please visit our website to see what Macally has to offer. We work hard to provide you with the best peripherals for your Mac.

Call us for dealers near you 1-800-644-1132 or visit us at: www.macally.com

All trademark or registered trademarks are the property of their respective owners

MEMORY and MORE!

Lifetime Warranty on RAM!

Authorized Dealer
Apple Specialist
Authorized Service Provider

BEST PRICES!

OnLine Discounted Pricing available only at www.macsolutions.com

Happy Holidays!

NEW MACS* & DRIVE SPECIALS!

PowerBook G3-400 64/10gb/DVD/FW/USB	2,499*
iMac™ G3-350 64/6gb/24x/56k Indigo	799*
iBook™ G3-366 12.1 64/10gb/24x/56k Indigo	1,599*
G4-400 64/10gb/DVD/56k	1,299*

*New Macs available for Walk-In sales only.

FireWire 7200 RPM HD 30/40/60gb	360/399/599
Seagate 18.4gb Barracuda 68pin UW SCSI	349
Seagate U160 SCSI Cheetah 9.2/18.4gb	239/359
Seagate U160 SCSI Cheetah 36.7gb	579
Seagate Cheetah 73.4gb 10,000rpm 68pin	1,099

G4/Yosemite/G3/iMac™

64 mb PC100	$ 39
128 mb	68
256 mb	174
512 mb iMac™ DV	385

168 Pin DIMMs

16 mb	$ 19
32 mb	39
64 mb DIMMs	82
128 mb	153

iMac™/iBook™/PBG3 98/99

64 mb	$ 39
128 mb iMac	75
256 mb	163
512 mb iBook	384

SIMMs 72 & 30 pin

4 mb	30 pin	$ 4
16 mb	30 pin	17
16/32 mb	72 pin SIMMs	20/38
64 mb	72 pin 6100/Sampler	69

SOFTWARE SPECIALS!

FinalCut® 1.2 w/FREE 64mb PC100	$999
Mac®OS 8.1 CD only	25
Norton Antivirus 6.0	69
Norton Utilities 4.0	29
Norton Utilities 5.0	99
Microsoft Office 2001	449
Adobe Photoshop 6.0	589

USED MAC BLOWOUT!

Beige G3-266 32/4gb/12x	$600
Beige G3-300 32/4gb/12x	650

*** The Memory market is *extremely* volatile. Please call or check our website for the most up-to-date prices.

MAC Solutions

WE BUY, SELL & TRADE MACS!
CALL (800) 80-WE-BUY for a quote

AppleCare® and Apple® Software Available. Call!

MacSolutions, Inc. 11933 Wilshire Boulevard, West Los Angeles, CA 90025 Fax: (310) 966-4433
University & School P.O.'s Welcome Note: All prices are subject to change. Limited to stock on hand. #1024

Secure Online Ordering or Call Toll-Free (800) 873-3RAM

www.macsolutions.com

GRAND OPENING

Mac Only Auctions (the way it should be)

- SELL YOUR MAC & RELATED ITEMS
- NO SELLERS LISTING FEES
- NO BIDDING FEES
- PROXY BIDDING
- BEST DEALS IN THE NATION
- NATIONAL DEALER SPECIALS
- PERSONAL AUCTION NOTIFICATIONS

MacBid dot com

WIN a DV iMac Just Register FREE

http://www.macbid.com 24 hours a day, 7 days a week

Herman Miller Aeron Chair

HEAVEN: a side view

800-883-9697

www.sittingmachine.com

$49.95 ADB ZephIR

Universal infrared remote control from your Macintosh.

MW2001 Booth #4154

Order NOW!

1.866.RED FIRE 733.3473

Visit us at: thezephIR.com from studioZee

GET IN SPACE

www.getinspace.com

HOST ON THIS

You design on a mac! Why not HOST on one!

877-711-HOST

iMate

UNIVERSAL ADB TO USB ADAPTER

Easily Connects Any ADB Device To USB-Equipped iMac or PC Computer

The innovative iMate USB to ADB adapter allows users to easily connect their existing ADB peripherals to iMacs, Macs with USB cards, and PCs with USB. The iMate is compatible with any ADB device including mice, keyboards, trackballs, trackpads, hardware dongles, and AppleVision displays.

Retail price $39

80 Fesslers Lane • Nashville, TN 37210
615.255.0990

info@griffintechnology.com
www.griffintechnology.com

GRIFFIN TECHNOLOGY

The gPort universal serial adapter is the perfect companion for your new blue G3 computer. Designed from the ground up with the G3 in mind it supports every serial device that works on your older Macs.

• Easy to install • Economical • Cost Effective

With the new G3s Apple has made a bold move to faster and more universal i/o interfaces. The gPort provides a great transition for people with existing serial equipment.

Retail price $49

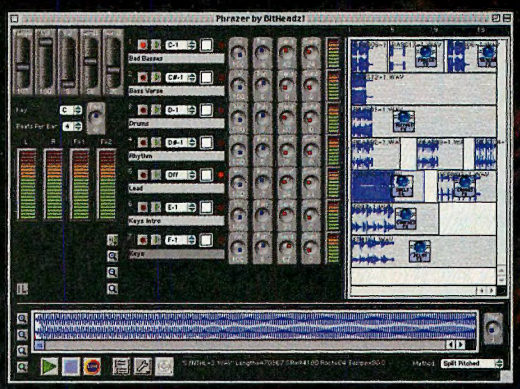
gPort

THE SERIAL SOLUTION

Loop the Loop.

Are you ready to loop? Then Phrazer™ is your software audio dream come true! The power to effortlessly create professional sounding music on your Mac is finally here.

Phrazer is *the* real-time audio loop sequencer Mac users have been waiting for. Powerful pitch and tempo matching algorithms, built-in sample editing, and on-board digital effects provide total control of your sound.



Phrazer Power

- Import Acid™ libraries
- Create with over 300 MB of included loops
- Assign multiple loops and DSP effects to each track
- Stream audio from hard-disk or load audio into RAM
- Gate tracks using QWERTY keyboard or MIDI controller
- Get maximum performance with Velocity Engine optimization
- Use ASIO, DirectConnect, MAS, ReWire, or Sound Manager
- Edit your samples for fine tuning audio files
- Render or Record entire mixes to disk

BitHeadz Inc. 4480 Capitola Road, Suite 202
Capitola, CA 95010 USA (888) 870-0070
www.bitheadz.com

BitHeadz

shut down

Who's up for a little millennial Microsoft bashing?

Falling Apples

When Apple's stock abruptly shed 50 percent of its value back in September, the reactions from the trade press were (typically enough) dramatically overblown and hysterically funny. Also, they generally missed Apple's stock split in June (in which the company traded each outstanding share for two or more shares), with the result that some news stories about Apple's stock price exaggerated the drop. Here are a few of the highlights.

WHAT HAPPENED IN JUNE AGAIN? c|net's News.com, in typical fashion, was one of the first off the mark with the story. In its haste to get the story out, though, the site managed to create one of the most misleading financial graphs we've ever seen (c|net, can you say *stock split?*).

Oh my God! Apple's per-share value crashed in June! It's almost like each share was only worth half what it was in the first half of the year! Oh, wait—it was.

AS WHAT? "Apple isn't going to make anywhere near as much money this quarter..." begins the *Register*'s (www.theregister.co.uk) article. Of course, not until paragraph four does the writer finally finish this statement: "[as] Apple and analysts were expecting."

UM, HANG ON... Checking with analysts is fine—everyone does that before running a financial news story. But the *Street* went one step further, reporting on the comments of a hedge-fund manager who was actually *shorting* AAPL! (Shorting, or short-selling, is a way investors make money when a stock's value goes down—they buy it on one date and agree to sell it later at that day's closing price.) "'It's a shocking preannouncement because it's so bad,' says Jeff Matthews, president of Connecticut-based hedge fund Ram Partners, which, quite luckily, is short Apple," blares the *Street*. Boy, isn't he lucky now that a Web financial service has picked up his comments?

News Stories We Thought We Read Somewhere...

Apple Rejects 0-Click Ordering

Cupertino—Despite having licensed 1-Click ordering from Amazon.com, Apple Computer has decided not to license Amazon's newly developed 0-Click technology, which enables products to arrive at the consumer's door without requiring that he or she order them in the first place.

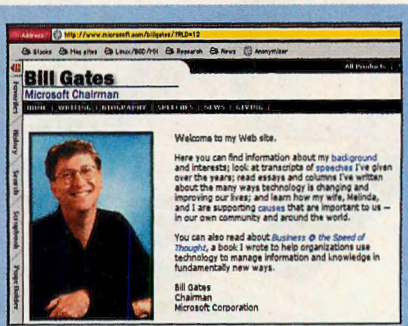
"Although 1-Click licensing has worked well for us, we're stopping there," said one highly placed Apple official. "We thought about using 0-Click ordering to get rid of our unsold G4 Cube inventory, but then we realized doing so would just make matters worse."

Apple Computer chose to stick with the 1-Click ordering technology it licensed from Amazon.com.

Amazon.com officials could not be reached for comment, presumably because they were filing a patent on text-based communication.

He's So Hunky!

Hot on the heels of being voted teen hunk of the year, Bill Gates has started his own Web site (http://microsoft.com/billgates). Here you can read about his background, his interests, his speeches, and what he and his wife Melinda consider important. What's missing: a poll pitting Bill against 'N Sync heartthrob Justin.



Turn-ons: Multibillion-dollar, market-grabbing acquisitions; long walks on the beach. Turn-offs: Probes by the Justice Department, third-world hunger.

FITZPATRICK THE RAT™

Visit the Fitzpatrick archive at www.insanely-great.com/comic/index.html. BY CHUCK DOWNS

Medicine For Your Mac

Nothing can ruin your day faster than a sick and ailing computer. And while Macintosh is one of the most reliable computers in the world, sometimes things can go wrong. That's why we invented TechTool Pro. TechTool Pro is the super-utility that can find and isolate almost any problem on your computer. No other utility in the world comes even close to covering as many aspects of your Macintosh as does TechTool Pro.

But diagnosing computer maladies is only half the battle. Besides repairing drives, recovering data and checking the health of your Macintosh components, TechTool Pro can now help protect you against virus problems and software conflicts. TechTool Pro can also keep your Mac running at its peak between problems. The program optimizes your disk drive to make your computer run faster and more efficiently. Our RAM panel even allows you to see the inner configuration of your memory without needing to open the case.

Do all these features make TechTool Pro complicated to use? Not at all. The MultiTester feature allows you to give your computer a full checkup with one click of your mouse. TechTool Pro even creates graphic, easy-to-read and understand reports. Now you can know the state of your computer without having a degree in computer science.

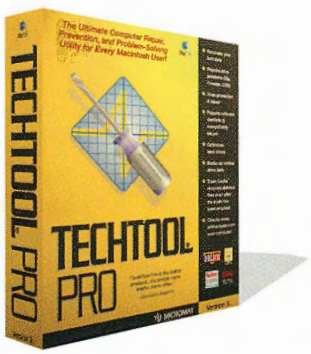
Every day, more and more Macintosh professionals are choosing TechTool over other system utilities. In fact, even Apple Computer includes TechTool Deluxe with every copy of their AppleCare™ Protection Plan. Simply put, TechTool Pro 3 is the most complete and powerful troubleshooting and repair utility available for your computer. Why would you settle for anything less?

MacWorld
Aug. 1999

MacAddict RATED SPIFFY!

MacHome 1999 Product Award

mac today EDITORS' CHOICE '98



Micromat Inc.
800-829-6227
707-566-3831
FAX: 707-566-3871
info@micromat.com
www.micromat.com

©2000 Micromat, Inc. All rights reserved. TechTool is a registered trademark of Micromat, Inc. Macintosh and AppleCare are trademarks of Apple Computer, Inc.

THE GRAPHIRE TABLET SYSTEM

CORDLESS MOUSE: 3 buttons, 3 times more accurate, never requires cleaning

PEN: Pressure sensitive with built-in eraser – create natural art strokes, edit photos and add signatures

SOFTWARE: New Power Suite bundle with Photoshop® LE, Painter Classic,® Sensiva™ and PenOffice™ included

THE MOUSE IS DEAD. LONG LIVE THE GRAPHIRE.

More control, accuracy and flexibility than you thought was possible. Powerful Photoshop LE and Painter Classic software included to digitally enhance your photos. Available in many colors and, best of all, at a revolutionary price of just 99^{95}. The Graphire changes everything.

visit **www.wacom.com/deadmouse**

call **800-922-2585**

graphire BY WACOM

©2000 Wacom Technology Corporation. Wacom is a registered trademark and Graphire is a trademark of Wacom Company Ltd. All rights reserved. All other trademarks property of their respective owners.